Hettich

GENERAL CATALOG

2021 | 2022

CENTRIFUGES
INCUBATORS


Hettich

DEAR PARTNER,

For more than 115 years, Hettich has been at your side when it comes to centrifugation and incubation of vital samples. In support of the highly competent medical and research personnel working daily in the laboratory, our products quietly help to make processes more efficient and provide reliable results. These qualities are more important today than ever before – in both the fight against global pandemics and the development of new vaccines and treatments. We take on this responsibility with a wide portfolio of centrifuges and incubators that comply with all current and future regulatory standards and certifications so that you can concentrate on your work.

In addition to ensuring high quality products, forward-looking new developments are also important. In this issue of our General Catalogue we present our innovative dual centrifuge, ZentriMix 380 R as well as the updated HettInfo II documentation system for our blood transfusion-focused centrifuges, the ROTO SILENTA 630 RS and ROTIXA 500 RS.

You will find these and other new products in the following pages. As always, our products are backed by our 24 month Global Warranty and 10 year spare parts support guarantee.

We thank you for your interest in Hettich and hope to continue our role as a trusted partner in your laboratory.

Klaus-Günter Eberle
CEO

OVER
115
YEARS
TRADITION
& QUALITY

GOOD IDEAS FOR EVEN MORE EFFICIENCY: **NEW PRODUCTS FROM HETTICH IN 2021.**

INNOVATION IN CENTRIFUGATION – THE DUAL CENTRIFUGE ZENTRIMIX 380 R

Homogenizing, mixing and milling – fast and efficient: The ZentriMix 380 R dual centrifuge allows many demanding laboratory tasks in research, development and analysis to be carried out efficiently. Examples include the rapid mixing of viscous materials, production of nanoparticles in closed (sterile) vessels and tissue disruption. A particular advantage is the powerful cooling system for preparation of temperature-sensitive samples. The ZentriMix 380 R is equipped with large rotating plates for sample vessels. Adapters for containers with a range of 2 - 50 ml are available. This allows up to 40 tubes to be centrifuged at the same time.

Approved technology: The ZentriMix 380 R was developed on the basis of proven Hettich centrifuge technology. This makes the unit safe, durable and reliable. In addition, the ZentriMix 380 R can also be used as a classic centrifuge with a standard rotor.

Recognized innovation: Hettich has already received several awards as an innovative company for the development of the versatile dual centrifuge ZentriMix 380 R and new applications in the fields of pharmaceuticals, food control and biomedical research.

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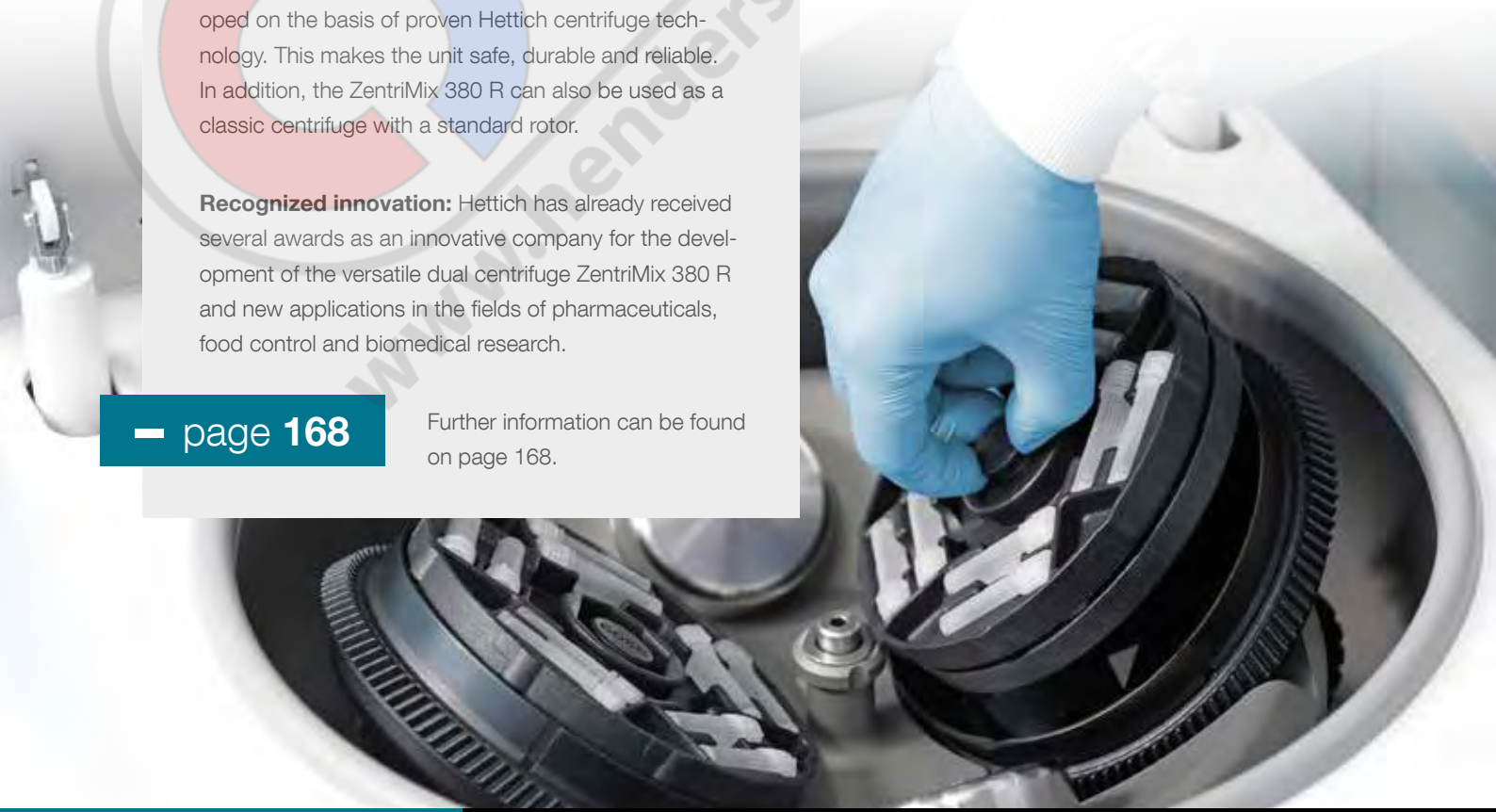
Further information can be found on page 168.



MORE TRANSPARENCY IN THE CENTRIFUGATION OF BLOOD SAMPLES

Ensuring quality is the top priority for blood donations. To achieve this, data obtained during the various manufacturing processes must be fully traceable and documented. With the new HettInfo II documentation system, all important steps before and during centrifugation can be documented. The touch display guides the user step by step through the process, from scanning the blood bags to centrifugation. Please go to page 160 to learn how to make your processes more transparent and traceable.

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THE WORLD MARKET LEADER IN AUTOMATION

For over 25 years, Hettich has remained the pioneer and undisputed world market leader in the field of automated centrifugation. The difference is the proven and durable Hettich technology that masters every requirement and every level of automation. With three model sizes and a wide range of accessories, Hettich offers solutions for a variety of automated applications. More on page 174.

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ENVIRONMENTAL SIMULATION PRODUCTS FROM HETTICH

In addition to the well-known portfolio of centrifuges and incubators, Hettich also offers a variety of solutions in the field of environmental simulation. The portfolio includes climatic and stability test cabinets as well as plant growth cabinets in various equipment variants and sizes. More information can be found on page 196.

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CONTACT

RESPONSIBILITY FOR YEARS

To get help selecting the perfect choice of equipment, sales support or any general inquiry, please contact our Global Customer Service Team.

Select your direct contact person by area or search our contact directory on www.hettichlab.com/contact

YOUR CONTACT OPTIONS BY AREA

EUROPE, UK, BLAKANS	sales1@hettichlab.com	+ 49 7461 705 1402
RUSSIA, UKRAINE, BELARUS, POLAND	sales1@hettichlab.com	+ 49 7461 705 1402
AFRICA	sales2@hettichlab.com	+ 49 7461 705 1403
MIDDLE EAST	sales2@hettichlab.com	+ 49 7461 705 1403
INDIA, PAKISTAN	sales3@hettichlab.com	+ 49 7461 705 1404
ASIA-PACIFIC	sales3@hettichlab.com	+ 49 7461 705 1404
NORTH- / SOUTH AMERICA	sales3@hettichlab.com	+ 49 7461 705 1404

SERVICE

5 GOOD REASONS TO CHOOSE HETTICH SERVICE

1. Short response time thanks to our 48-hour response promise.*
2. Our technical specialists are always available for one-to-one communication. No more waiting on a hotline or in a call-center.
3. Localized consulting and qualification.
4. Preventive maintenance contracts available.*
5. Parts and service are available for 10 years, even after a specific model has been discontinued.

Our global network of Hettich subsidiaries and authorized service providers ensure that customer challenges are addressed quickly and efficiently with real-time solutions.

You can reach us through the following email address:

service@hettichlab.com

In addition to our German headquarters we have branch offices in throughout Europe as well as the USA (North America) and Singapore (ASEAN) to offer fast, local support. You can find an overview of an authorized service provider for your country on our Website: www.hettichlab.com/contact

*) Not available in all countries.

CONTENTS

SMALL CENTRIFUGES

Benchtop performance in a compact footprint

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EBA 200 | 200 S
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EBA 270
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01

EBA 280 | 280 S

on page 20

HAEMATOKRIT 200

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MANUAL CENTRIFUGE

Operate independently anywhere

The adaptable manual centrifuge can be simply clamped to any benchtop, with no need for electricity. Its self-lubricating drive system makes it virtually maintenance-free.

FEATURES

- Max. RPM: 3,000 min^{-1}
- Max. RCF: 1,298
- Max. capacity: 4 x 15 ml
- Maintenance-free due to its self-lubricating drive system
- Clamping device for simple table mounting
- Choice of 2 rotors

FIELDS OF APPLICATION

- Veterinary
- Field Testing
- Aid Organizations
- Pharmacies

TECHNICAL DATA

	MANUAL CENTRIFUGE without rotor	**Swing-out rotor,** 4-place	**Swing-out rotor,** 4-place
angle	-	90°	50°
max. capacity	-	4 x 15 ml (conical only)	4 x 15 ml
max. RPM	-	3,000 min^{-1}	3,000 min^{-1}
max. RCF	-	1,298	1,077
dimensions (W x D x H)	140 x 175 x 285 mm	-	-
weight	approx. 0.9 kg	-	-
Cat. No.	**1011**	**1014**	**1025**

EBA 200 | 200 S

Top performance for small laboratories

The EBA 200 and EBA 200 S are practical, compact centrifuges for small sample sizes. The high speed S model can deliver reliable results in 3 minutes or less. An 8-place fixed angle rotor is included to hold standard blood and urine tubes up to 15 ml in capacity.

FEATURES

- Max. RPM: 200 - 6,000 min $^{-1}$ | 8,000 min $^{-1}$ – adjustable in increments of 10
- Max. RCF: 3,461 | 6,153
- Max. capacity: 8 x 15 ml
- Small centrifuge including 8-place angle rotor
- Compact design
- IVD-conform according to directive 98/79/EC
- Maximum noise level of ≤ 50 dB(A) (EBA 200)
- Impulse key for short cycle mode
- 2 individual acceleration and deceleration stages
- Easy operation with keypad

FIELDS OF APPLICATION

- Physician's Office Laboratory (POL)
- Small laboratories
- Veterinary laboratories
- Off-site draw locations

Centrifuge packages for the model can be found on page 15

More information about the control panel can be found on page 198

IVD CONFORM according to directive 98/79/EC

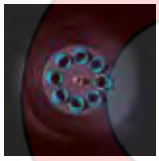
INCLUDING ROTOR

TECHNICAL DATA

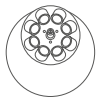
	EBA 200	EBA 200 S
voltage *)	200 – 240 V 1 ~	200 – 240 V 1 ~
frequency	50 – 60 Hz	50 – 60 Hz
consumption	100 VA	160 VA
emission, immunity	EN/IEC 61326-1, class B	EN/IEC 61326-1, class B
max. capacity	8 x 15 ml	8 x 15 ml
max. RPM	6,000 min^{-1}	8,000 min^{-1}
max. RCF	3,461	6,153
running time	1 – 99 min, ∞ continuous run, short cycle mode (impulse button)	1 – 99 min, ∞ continuous run, short cycle mode (impulse button)
dimensions (W x D x H)	261 x 353 x 228 mm	261 x 353 x 228 mm
weight	approx. 9 kg	approx. 11 kg
max. noise level	≤ 50 dB (A)	≤ 55 dB (A)
Cat. No.	**1800**	**1802**
100 – 127 V 1 ~ / 50–60 Hz	1800-01	1802-01
emission, immunity	FCC class B	FCC class B

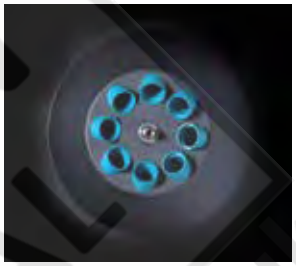
*) Other voltages on request.

AVAILABLE ROTORS

ANGLE ROTORS		angle	max. RPM	max. capacity	Cat. No	page
	angle rotor, 8-place	33°	6,000 min^{-1} I 8,000 min^{-1}	8 x 15 ml	INCLUSIVE	14

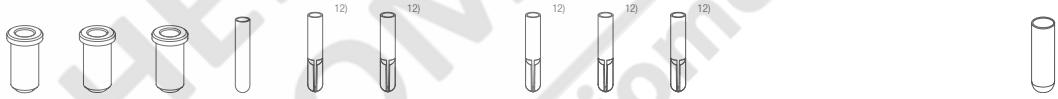
ANGLE ROTOR, 8-PLACE





Rotor		
max. RPM	EBA 200 I 200 S	6,000 min^{-1} I 8,000 min^{-1}
max. RCF		3,461 I 6,153
max. capacity		8 x 15 ml
run up / run down, braked in sec		17 / 12 I 37 / 17
angle		33°
Cat. No.		**INCLUSIVE**

Vessels																
capacity in ml		0.5	1.5	2	4	5	6	15	1.1 – 1.4	2.6 – 3.4	2.7 – 3	4.5 – 5	4.9	7.5 – 8.5	9 – 10	5
Ø x L in mm		10.7 x 36	11 x 38	11 x 38	10 x 88	12 x 75	12 x 82	17 x 100	8 x 66	13 x 65	11 x 66	11 x 92	13 x 90	15 x 92	16 x 92	17 x 59
max. RCF [2]	EBA 200	2,214	2,173	2,173	2,817	2,697	2,697	3,461	2,697	2,697	2,697	3,461	3,461	3,461	3,461	2,576
max. RCF [2]	EBA 200 S	3,935	3,864	3,864	5,009	4,794	4,794	6,153	4,794	4,794	4,794	6,153	6,153	6,153	6,153	4,579
radius in mm		55	54	54	70	67	67	86	67	67	67	86	86	86	86	64
Cat. No.		**Pediatric**	**microliter tubes**		**tubes [2]**				**blood collection / urine tubes**							**-**



Adapter																
boring Ø x L in mm		11 x 35	11 x 35	11 x 35	11.5 x 67.5	13.5 x 60 [12]	13.5 x 60 [12]	17.7 x 88	13.5 x 60 [12]	13.5 x 60 [12]	13.5 x 60 [12]	17.7 x 88	17.7 x 88	17.7 x 88	17.7 x 88	17 x 25
vessels per rotor		8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Cat. No.		**1063-8 (8 pcs.)**			**6305**	**1054-A**	**1054-A**	**-**	**1054-A**	**1054-A**	**1054-A**	**-**	**-**	**-**	**-**	**1064**

Vessels								
capacity in ml		15	10	1.6 – 5	4 – 7	8	8.5-10	12
Ø x L in mm		17 x 120	15 x 102	13 x 75	13 x 100	16 x 125	16 x 100	17 x 102
max. RCF [2]	EBA 200	3,461	3,461	2,697	3,461	3,461	3,461	3,461
max. RCF [2]	EBA 200 S	6,153	6,153	4,794	6,153	6,153	6,153	6,153
radius in mm		86	86	86	86	86	86	86
Cat. No.		**-**	**blood collection / urine tubes**					

Adapter								
boring Ø x L in mm		17.7 x 88	17.7 x 88	13.5 x 60 [12]	13.5 x 79	17.7 x 88	17.7 x 88	17.7 x 88
vessels per rotor		4	8	8	8	4	8	4
Cat. No.		**-**	**-**	**1054-A**	**1058**	**-**	**-**	**-**

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

12) For the EBA 200 only! Model EBA 200 S is supplied as standard with an adapter for these tubes.

PACKAGES

EBA 200 S BLOOD TUBE PACKAGE 1

- 1 x EBA 200 S centrifuge incl. anlge rotor, 8-place 1802
- 8 x adapter, 1-place 1054-A
- 8 x adapter, 1-place 1058

1802SET1

number of vessels	volume (ml)	size (mm)	RPM	RCF
8	1.6 - 5	13 x 75	8,000	4,794
8	4 - 7	13 x 100	8,000	6,153
8	8.5 - 10	16 x 100	8,000	6,153
8	8	16 x 125	8,000	6,153

EBA 200 BLOOD TUBE PACKAGE 2

- 1 x EBA 200 centrifuge incl. angle rotor 1800
- 8 x adapter, 1-place 1059
- 8 x adapter, 1-place 1058

1800SET2

number of vessels	volume (ml)	size (mm)	RPM	RCF
8	1.6 - 5	13 x 75	6,000	2,697
8	4 - 7	13 x 100	6,000	3,461
8	8.5 - 10	16 x 100	6,000	3,461
4	8	16 x 125	6,000	3,461

PRODUCT VIDEOS

Would you like to learn more about this product? Scan the QR Code to visit our YouTube channel:

www.youtube.com/hettichlabtechnology

EBA 270

Superior seperation results in medical applications

The EBA 270 is a small centrifuge with a built-in swing-out rotor that has been developed specifically for use in clinical settings. It can centrifuge blood tubes and urine tubes up 15 ml in volume at a maximum speed of 4,000 RPM / 2,254 RCF. Its 90° rotor is ideally suited for spinning blood tubes containing a separating gel.

FEATURES

- Max. RPM: 500 - 4,000 min^{-1} – adjustable in increments of 100
- Max. RCF: 2,254
- Max. capacity: 6 x 15 ml
- Small centrifuge including 6-place swing-out rotor
- Compact design
- IVD-conform according to directive 98/79/EC
- Maximum noise level of ≤ 51 dB(A)
- Impulse key for short cycle mode
- 2 individual deceleration stages
- Easy operation with keypad

FIELDS OF APPLICATION

- Small laboratories
- Physician's Office Laboratory (POL)

Centrifuge packages for the model can be found on page 19

More information about the control panel can be found on page 198

IVD CONFORM according to directive 98/79/EC

INCLUDING ROTOR

TECHNICAL DATA

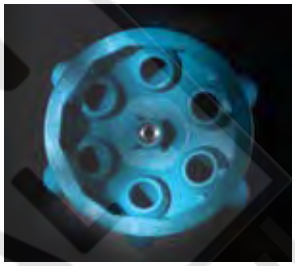
	EBA 270
voltage *)	200 – 240 V 1 ~
frequency	50 – 60 Hz
consumption	130 VA
emission, immunity	EN/IEC 61326-1, class B
max. capacity	6 x 15 ml
max. RPM	4,000 min^{-1}
max. RCF	2,254
running time	1 – 99 min, ∞ continuous run, short cycle mode (impulse button)
dimensions (W x D x H)	326 x 389 x 239 mm
weight	approx. 14 kg
max. noise level	≤ 51 dB (A)
Cat. No.	**2300**
100 – 127 V 1 ~ / 50 – 60 Hz	2300-01
consumption	125 VA
emission, immunity	FCC class B

*) Other voltages on request.

AVAILABLE ROTORS

SWING-OUT ROTORS		angle	max. RPM	max. capacity	Cat. No	page
	swing-out rotor, 6-place	90°	4,000 min^{-1}	6 x 15 ml	INCLUSIVE	18

SWING-OUT ROTOR, 6-PLACE



Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,254
max. capactiy	6 x 15 ml
run up I run down, braked in sec	10 I 22
angle I max. noise level	90° I 51 dB (A)
Cat. No.	**INCLUSIVE**

Vessels															
capacity in ml	0.5	0.5	1.5	1.5	2	2	4	5	6	15	1.1 – 1.4	2.6 – 3.4	2.7 – 3	4 – 5.5	4.5 – 5
Ø x L in mm	10.7 x 36	10.7 x 36	11 x 38	11 x 38	11 x 38	11 x 38	10 x 88	12 x 75	12 x 82	17 x 100	8 x 66	13 x 65	11 x 66	15 x 75	11 x 92
max. RCF [2]	1,359	1,359	1,377	1,377	1,377	1,377	2,254	1,807	1,807	2,254	1,807	1,807	1,807	2,254	2,254
radius in mm	76	76	77	77	77	77	126	101	101	126	101	101	101	126	126
Cat. No.	**Pediatric**		**microliter tubes**				**tubes [2]**				**blood collection / urine tubes**				
	+ 1063-6	+ 1063-6	+ 1063-6	+ 1063-6	+ 1063-6	+ 1063-6									
Adapter															
boring Ø x L in mm	17.5 x 80	17.5 x 55	17.5 x 80	17.5 x 55	17.5 x 80	17.5 x 55	17.5 x 80	17.5 x 55	17.5 x 55	17.5 x 80	17.5 x 55	17.5 x 55	17.5 x 55	17.5 x 80	17.5 x 80
vessels per rotor	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Cat. No.	**2331-6**	**2333-6**	**2331-6**	**2333-6**	**2331-6**	**2333-6**	**2331-6**	**2333-6**	**2333-6**	**2331-6**	**2333-6**	**2333-6**	**2333-6**	**2331-6**	**2331-6**

Vessels							
capacity in ml	4.9	7.5 – 10	10	1.6 – 7	4-7	8.5 – 10	12
Ø x L in mm	13 x 90	15/16 x 75	15 x 102	13/16 x 75	13 x 100	16 x 100	17 x 102
max. RCF [2]	2,254	2,254	2,254	1,807	2,254	2,254	2,254
radius in mm	126	126	126	101	126	126	126
Cat. No.	**blood collection / urine tubes**						
Adapter							
boring Ø x L in mm	17.5 x 80	17.5 x 80	17.5 x 80	17.5 x 55	17.5 x 80	17.5 x 80	17.5 x 80
vessels per rotor	6	6	6	6	6	6	6
Cat. No.	**2331-6**	**2331-6**	**2331-6**	**2333-6**	**2331-6**	**2331-6**	**2331-6**

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

PACKAGES

EBA 270 BLOOD TUBE COMPLETE PACKAGE 1		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x EBA 270 centrifuge incl. swing-out rotor	2300	6	1.6 - 7 / 100	13 x 75	4,000	1,807
		6	4 - 10 / 100	13 x 100	4,000	2,254
- 1 x bucket (set), 1-place	2333-6	6	0.5 Pediatric	10,7 x 36	4,000	1,359
- 1 x bucket (set), 1-place	2331-6	6	12 (Kova)	17 x 102	4,000	2,254
- 1 x adapter Pediatric (set), 1-place	1063-6					
2300SET1						

PRODUCT VIDEOS

Would you like to learn more about this product? Scan the QR Code to visit our YouTube channel:

www.youtube.com/hettichlabtechnology

EBA 280 | 280 S

Simple rotor change for greater versatility

The EBA 280 and EBA 280 S offer exceptional user comfort and a choice of 6 rotors. The rotor can be removed and replaced easily thanks to the quick release system. The rotor locks in place and remains secure without the use of tools or extra effort. The backlit digital control panel offers the opportunity to save 9 multiple program settings.

FEATURES

- RPM: 200 - 6,000 min $^{-1}$ – adjustable in increments of 10
- Max. RCF: 4,146 | 5,071
- Max. capacity: 6 x 50 ml
- Small centrifuge with rapid rotor change system
- Choice of 6 rotors
- IVD-conform according to directive 98/79/EC
- Maximum noise level of ≤ 51 dB(A) (EBA 280)
- Impulse key for short cycle mode
- 9 individual acceleration and deceleration stages
- Easy operation with keypad
- 9 programmable memory settings

FIELDS OF APPLICATION

- Small laboratories
- Hospitals
- Blood banks
- Veterinary laboratories
- Physician's Office Laboratory (POL)

Centrifuge packages for the model can be found on page 26

More information about the control panel can be found on page 198

IVD CONFORM
according to directive 98/79/EC

TECHNICAL DATA

	EBA 280	EBA 280 S
voltage *)	200 – 240 V 1 ~	200 – 240 V 1 ~
frequency	50 – 60 Hz	50 – 60 Hz
consumption	185 VA	330 VA
emission, immunity	EN/IEC 61326-1, class B	EN/IEC 61326-1, class B
max. capacity	6 x 50 ml	6 x 50 ml
max. RPM	6,000 min^{-1}	6,000 min^{-1}
max. RCF	4,146	5,071
running time	1 – 99 min: 59 sec, ∞ continuous run, short cycle mode (impulse button)	1 – 99 min: 59 sec, ∞ continuous run, short cycle mode (impulse button)
dimensions (W x D x H)	326 x 400 x 242 mm	326 x 400 x 242 mm
weight	approx. 12 kg	approx. 12 kg
noise level	≤ 47 dB (A) with rotor 1137	≤ 50 dB (A) with rotor 1137
Cat. No.	**1101**	**1102**
100 – 127 V 1 ~ / 50–60 Hz	1101-01	1102-01
emission, immunity	FCC class B	FCC class B

*) Other voltages on request.

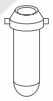
AVAILABLE ROTORS

SWING-OUT ROTORS	angle	max. RPM	max. capacity	Cat. No.	page
 swing-out rotor, 6-place	90°	6,000 min^{-1}	6 x 15 ml	**1146**	22
swing-out rotor, 8-place	90°	5,000 min^{-1}	8 x 10 ml	**1148**	23
swing-out rotor, 12-place	60°	5,000 min^{-1}	12 x 5 ml	**1142**	23
ANGLE ROTORS					
 angle rotor, 6-place	35°	6,000 min^{-1}	6 x 50 ml	**1137**	24
angle rotor, 12-place	35°	5,000 min^{-1}	12 x 7 ml	**1133**	24
angle rotor, 12-place	35°	6,000 min^{-1}	12 x 15 ml	**1139**	25

SWING-OUT ROTOR, 6-PLACE | 1146

Rotor	
max. RPM EBA 280 I EBA 280 S	4,700 min^{-1} I 6,000 min^{-1}
max. RCF	3,112 I 5,071
max. capactiy	6 x 15 ml
run up / run down, braked in sec	9 / 11 I 11 / 13
angle I max. noise level	90° I 49 dB (A)
Cat. No.	**1146**

+



Bucket	
Cat. No.	**1147-6 (6 pcs.)**

Vessels																
capacity in ml		0.5	1.5	2	4	5	6	15	1.1–1.4	2.6–3.4	2.7–3	4–5.5	4.5-5	4.9	7.5–10	1.6–5
Ø x L in mm		10.7 x 36	11 x 38	11 x 38	10 x 88	12 x 75	12 x 82	17 x 100	8 x 66	13 x 65	11 x 66	15 x 75	11 x 92	13 x 90	15/16 x 92	13 x 75
max. RCF [2]	EBA 280	1,877	1,902	1,902	3,112	2,618	2,865	3,112	2,618	2,618	2,618	3,112	3,112	3,112	3,112	2,618
max. RCF [2]	EBA 280 S	3,059	3,099	3,099	5,071	4,266	4,669	5,071	4,266	4,266	4,266	5,071	5,071	5,071	5,071	4,266
radius in mm		76	77	77	126	106	116	126	106	106	106	126	126	126	126	106
Cat. No.		**Pediatric**	**microliter tubes**		**tubes [2]**				**blood collection / urine tubes**							

+

Adapter																
boring Ø x L in mm		11 x 35	11 x 35	11 x 35	17.5 x 80	13.5 x 59	17.5 x 80	17.5 x 80	13.5 x 59	13.5 x 59	13.5 x 59	17.5 x 80	17.5 x 80	17.5 x 80	17.5 x 80	13.5 x 59
vessels per rotor		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Cat. No.		**1063-6 (6 pcs.)**			**-**	**1053-6**	**0767-6**	**-**	**1053-6 (6 pcs.)**			**-**	**-**	**-**	**-**	**1053-6**

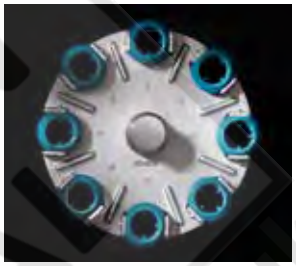
Vessels					
capacity in ml		4–7	4–7	8.5 – 5	12
Ø x L in mm		16 x 75	13 x 100	16 x 100	17 x 102
max. RCF [2]	EBA 280	2,865	3,112	3,112	3,112
max. RCF [2]	EBA 280 S	4,669	5,071	5,071	5,071
radius in mm		116	126	126	126
Cat. No.		**blood collection/ urine tubes**			

+

Adapter					
boring Ø x L in mm		17.5 x 80	13.5 x 79	17.5 x 80	17.5 x 80
vessels per rotor		6	6	6	6
Cat. No.		**0767-6**	**1058**	**-**	**-**

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

SWING-OUT ROTOR, 8-PLACE | 1148



Rotor	
max. RPM I max. RCF	5,000 min^{-1} I 2,991
max. capactiy	8 x 10 ml
run up I run down, braked in sec	8 I 10
angle I max. noise level	90° I 50 dB (A)
Cat. No.	**1148**

Vessels								
capacity in ml	5	6	10	2.6–3.4	2.7–3	4–5.5	1.6–5	4–7
Ø x L in mm	12 x 75	12 x 82	17 x 70	13 x 65	11 x 66	15 x 75	13 x 75	16 x 75
max. RCF [2]	2,991	2,991	2,991	2,991	2,991	2,991	2,991	2,991
radius in mm	107	107	107	107	107	107	107	107
Cat. No.	**tubes [2]**			**blood collection / urine tubes**				

+ Bucket								
boring Ø x L in mm	13 x 53	13 x 53	17.5 x 53	13 x 53	13 x 53	17.5 x 53	13 x 53	17.5 x 53
vessels per rotor	8	8	8	8	8	8	8	8
Cat. No.	**1131-A**	**1131-A**	**1132-A**	**1131-A**	**1131-A**	**1132-A**	**1131-A**	**1132-A**

SWING-OUT ROTOR, 12-PLACE | 1142

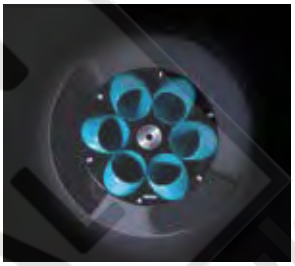
Rotor	
max. RPM I max. RCF	5,000 min^{-1} I 2,963
max. capactiy	12 x 5 ml
run up I run down, braked in sec	10 I 12
angle I max. noise level	60° I 49 dB (A)
Cat. No.	**1142**

Vessels				
capacity in ml	5	2.6–3.4	2.7–3	1.6–5
Ø x L in mm	12 x 75	13 x 65	11 x 66	13 x 75
max. RCF [2]	2,963	2,963	2,963	2,963
radius in mm	106	106	106	106
Cat. No.	**tube [2]**	**blood collection / urine tubes**		

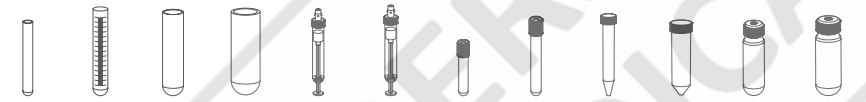
+ Bucket				
boring Ø x L in mm	13.2 x 53	13.2 x 53	13.2 x 53	13.2 x 53
vessels per rotor	12	12	12	12
Cat. No.	**1127-A**	**1127-A**	**1127-A**	**1127-A**

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

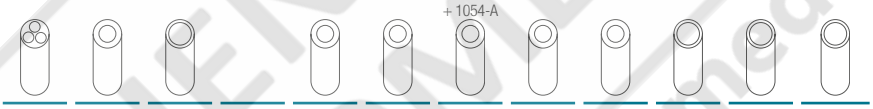
ANGLE ROTOR, 6-PLACE | 1137



Rotor	
max. RPM I max. RCF	6,000 min^{-1} I 4,025
max. capactiy	6 x 50 ml
run up I run down, braked in sec	20 I 17
angle I max. noise level	35° I 47 dB (A)
Cat. No.	**1137**



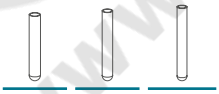
Vessels												
capacity in ml	7	15	25	50	9–10	10	1.6–5	4–7	15	50	30	50
Ø x L in mm	12 x 100	17 x 100	24 x 100	34 x 100	16 x 92	15 x 102	13 x 75	13 x 100	17 x 120	29 x 115	26 x 95	29 x 107
max. RCF [2]	3,944	3,783	3,703	4,025	3,783	3,783	2,978	3,783	3,824	3,824	3,703	3,904
radius in mm	98	94	92	100	94	94	74	94	95	95	92	97
Cat. No.	**tubes [2]**				**blood collection / urine tubes**				**tubes with screw cap**			



Adapter												
boring Ø x L in mm	13 x 92	17.5 x 95	26 x 88	35 x 96	17.5 x 95	17.5 x 95	17.5 x 95	17.5 x 95	17 x 98	30 x 98	26 x 88	29 x 95
vessels per rotor	18	6	6	6	6	6	6	6	6	3	6	6
Cat. No.	**1632**	**1635**	**1633**	**-**	**1635**	**1635**	**1635**	**1635**	**1631**	**1641**	**1633**	**1634**

ANGLE ROTOR, 12-PLACE | 1133

Rotor	
max. RPM I max. RCF	5,000 min^{-1} I 2,879
max. capactiy	12 x 7 ml
run up I run down, braked in sec	8 I 10
angle I max. noise level	35° I 51 dB (A)
Cat. No.	**1133**



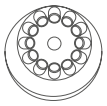
Vessels			
capacity in ml	5	6	7
Ø x L in mm	12 x 75	12 x 82	12 x 100
max. RCF [2]	2,879	2,879	2,879
radius in mm	103	103	103
Cat. No.	**tubes [2]**		

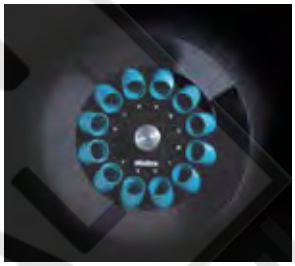
Adapter			
boring Ø x L in mm	12.5 x 66	12.5 x 66	12.5 x 66
vessels per rotor	12	12	12
Cat. No.	**-**	**-**	**-**

What makes the 1133 rotor special is its adapters with a decanting aid. The decanting aid firmly holds the tube and keeps it from falling out when the supernatant is decanted. The 1133 rotor is often used in blood typing serology.

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

ANGLE ROTOR, 12-PLACE | 1139





Rotor	
max. RPM I max. RCF	6,000 min^{-1} I 4,146
max. capactiy	12 x 15 ml
run up I run down, braked in sec	16 I 16
angle I max. noise level	35° I 50 dB (A)
Cat. No.	**1139**

Vessels															
capacity in ml	0.5	1.5	2	5	6	15	1.1–1.4	2.6–3.4	2.7–3	4.5–5	4.9	7.5–10	10	1.6–5	4–7
Ø x L in mm	10.7x36	11 x 38	11 x 38	12x75	12x82	17x100	8x66	13x65	11x66	11x92	13x90	15/16x92	15x102	13x75	13x100
max. RCF [2]	2,777	2,737	2,737	3,300	3,300	4,146	3,300	3,300	3,300	4,146	4,146	4,146	4,146	3,300	4,146
radius in mm	69	68	68	82	82	103	82	82	82	103	103	103	103	82	103
Cat. No.	**Pediatric**	**microliter tubes**		**tubes [2]**			**blood collection / urine tubes**								

Adapter															
boring Ø x L in mm	11 x 35	11 x 35	11 x 35	13.5x60	13.5x60	17.7x88	13.5x60	13.5x60	13.5x60	17.7x88	17.7x88	17.7x88	17.7x88	13.5x60	13.5x79
vessels per rotor	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Cat. No.	**1063-6 (6 pcs.)**			**1054-A**		-	**1054-A**			-	-	-	-	**1054-A**	**1058**

Vessels					
capacity in ml	8	8.5 – 10	12	5	15
Ø x L in mm	16x125	16x100	17 x 102	17x59	17x120
max. RCF [2]	4,146	4,146	4,146	3,180	4,146
radius in mm	103	103	103	79	103
Cat. No.	**blood collection / urine tubes**			-	-

Adapter					
boring Ø x L in mm	17.7x88	17.7x88	17.7x88	17x25	17.7x88
vessels per rotor	6	12	6	12	6
Cat. No.	-	-	-	**1064**	-

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

PACKAGES

EBA 280 SEROLOGY PACKAGE 1		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x EBA 280 centrifuge	1101	12	1.6 - 5	11 / 12 / 13 x 75	5,000	2,963
- 1 x swing-out rotor, 12-place	1142					
- 12 x bucket	1127-A					
1101SET1						

EBA 280 BLOOD TUBE PACKAGE 2		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x EBA 280 centrifuge	1101	6	1.6 - 5	13 x 75	4,700	2,618
- 1 x swing-out rotor, 6-place	1146	6	4 - 7	13 x 100	4,700	3,112
- 1 x bucket (set)	1147-6	6	4 - 7	16 x 75	4,700	2,865
- 1 x adapter (set), 1-place	1053-6	6	8.5 - 10	16 x 100	4,700	3,112
- 6 x adapter, 1-place	1058					
- 1 x spacer (set)	0767-6					
1101SET2						

EBA 280 BLOOD TUBE PACKAGE 3		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x EBA 280 centrifuge	1101	12	1.6 - 5	13 x 75	6,000	3,300
- 1 x angle rotor, 12-place	1139	12	4 - 7	13 x 100	6,000	3,300
- 12 x adapter, 1-place	1059	12	4 - 10	16 x 75	6,000	4,146
- 12 x adapter, 1-place	1058	12	8.5 - 10	16 x 100	6,000	4,146
1101SET3						

EBA 280 BLOOD TUBE PACKAGE 4		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x EBA 280 centrifuge	1101	8	1.6 - 5	13 x 75	5,000	2,991
- 1 x swing-out rotor, 8-place	1148	8	4 - 7	16 x 75	5,000	2,991
- 8 x bucket	1131-A					
- 8 x bucket	1132-A					
1101SET4						

EBA 280 SEROLOGY DECANTING PACKAGE 5		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x EBA 280 centrifuge	1101	12	5	12 x 75 / 100	5,000	2,879
- 1 x angle rotor, 12-place	1133					
1101SET5						

EBA 280 S BLOOD TUBE PACKAGE 1		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x EBA 280 S centrifuge	1102	6	1.6 - 5	13 x 75	6,000	4,266
- 1 x angle rotor, 6-place	1146	6	4 - 7	13 x 100	6,000	5,071
- 1 x bucket (set)	1147-6	6	4 - 7	16 x 75	6,000	4,699
- 1 x adapter (set)	1053-6	6	8.5 - 10	16 x 100	6,000	5,071
- 6 x adapter, 1-place	1058					
- 1 x spacer (set)	0767-6					
1102SET1						

PRODUCT VIDEOS

Would you like to learn more about this product? Scan the QR Code to visit our YouTube channel:

www.youtube.com/hettichlabtechnology

HAEMATOKRIT 200

Haematokrit determination in just 7 minutes

The HAEMATOKRIT 200 is a fast and efficient centrifuge for determining hematocrit count. It runs at 13,000 RPM and accommodates up to 24 capillary tubes to a maximum RCF of 16,060. Results can be clearly viewed with the integrated Haematocrit reader in the rotor lid.

FEATURES

- RPM: 200 - 13,000 min^{-1} – adjustable up to 10,000 RPM in increments of 10, above in increments of 100
- Max. RCF: 16,060
- Compact, high-performance hematocrit centrifuge
- IVD-conform according to directive 98/79/EC
- Maximum noise level of ≤ 56 dB(A)
- Impulse key for short cycle mode
- 2 individual acceleration and deceleration stages
- Easy operation with keypad

FIELDS OF APPLICATION

- Paediatric clinics
- Manufacturers of analyzing systems
- Small hospitals
- Sports medicine

More information about the control panel can be found on page 198

IVD CONFORM
according to directive 98/79/EC

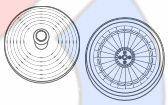
INCLUDING ROTOR

TECHNICAL DATA

	HAEMATOKRIT 200
voltage *)	200 – 240 V 1 ~
frequency	50 – 60 Hz
consumption	270 VA
emission, immunity	EN/IEC 61326-1, class B
max. capacity	24 capillaries
max. RPM	13,000 min^{-1}
max. RCF	16,060
running time	1 – 99 min, ∞ continuous run, short cycle mode (impulse button)
dimensions (W x D x H)	261 x 353 x 228 mm
weight	approx. 10 kg
max. noise level	≤ 56 dB (A)
Cat. No.	**1801**
100 – 127 V 1 ~ / 50 – 60 Hz	1801-01
emission, immunity	FCC class B

*) Other voltages on request.

AVAILABLE ROTOR



Rotor	
max. RPM I max. RCF	13,000 min^{-1} I 16,060
max. capacity	24 capillaries
run up I run down, braked in sec	9 I 16
angle I max. noise level	90° I 56 dB (A)
measuring lid	inclusive
Cat. No.	**INCLUSIVE**

Capillaries Standard	
max. RCF [2]	16,060
radius in mm	85
Cat. No.	-

+

Adapter	
boring Ø x L in mm	-
capillaries per rotor	24
Cat. No.	-

HOLDING TRAYS
The holding trays in rotor 2076 are easy to clean and disposable in the case of glass breakage.

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

MICROLITER CENTRIFUGES

Powerful results at the micro level

MIKRO 185
on page 32

MIKRO 200 | 200 R
on page 36

MIKRO 220 | 220 R
on page 42

MICROLITER
CENTRIFUGES

MIKRO 185

Small footprint with unmatched capacity

The MIKRO 185 accommodates 12, 18 or 24 samples and is suitable for a wide range of tasks, thanks to a maximum RCF of 18,845 and a choice of 4 rotors. Spin column kits (minipreps) can also be used thanks to the special design of the 1213-A rotor.

FEATURES

- RPM: 200 - 14,000 min $^{-1}$ – Adjustable up to 10,000 RPM in increments of 10, above in increments of 100
- Max. RCF: 18,845
- Max. capacity: 24 x 2.0 ml
- Compact, high-performance microlitre centrifuge
- Choice of 4 rotors
- IVD-conform according to directive 98/79/EC
- Noise level of ≤ 54 dB (A) with rotor 1252-A
- Impulse button for short centrifugation
- Easy operation with keypad

FIELDS OF APPLICATION

- Hospitals
- Pediatric clinics
- Pharmaceutical laboratories
- Food analyzing laboratories
- University / Academic Research
- Forensic laboratories
- Paternity testing laboratories
- Blood centers

More information about the control panel can be found on page 198

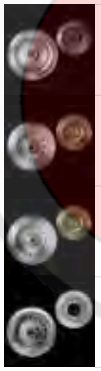
IVD CONFORM
according to directive 98/79/EC

TECHNICAL DATA

	MIKRO 185
voltage *)	200 – 240 V 1 ~
frequency	50 – 60 Hz
consumption	330 VA
emission, immunity	EN/IEC 61326-1, class B
max. capacity	24 x 1.5 / 2.0 ml
max. RPM	14,000 min $^{-1}$
max. RCF	18,845
running time	1 – 99 min: 59 s, ∞ continuous run, short cycle mode (impulse button)
dimensions (W x D x H)	261 x 353 x 228 mm
weight	approx. 11 kg
noise level	≤ 54 dB (A) with rotor 1252-A
Cat. No.	**1203**
100 – 127 V 1 ~ / 50–60 Hz	1203-01
emission, immunity	FCC class B

*) Other voltages on request.

AVAILABLE ROTORS

ANGLE ROTORS	angle	max. RPM	max. capacity	Cat. No.	page
 angle rotor, 24-place	45°	14,000 min $^{-1}$	24 x 2 ml	**1226-A**	34
angle rotor, 12-place	45°	14,000 min $^{-1}$	12 x 2 ml	**1252-A**	34
angle rotor, 18-place	45°	14,000 min $^{-1}$	18 x 2 ml	**1258-A**	35
angle rotor, 18-place for spin column kits	45°	14,000 min $^{-1}$	18 x 2 ml	**1213-A**	35

PRODUCT VIDEOS

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ANGLE ROTOR, 24-PLACE | 1226-A

Rotor		Lid bioseal [5]	
max. RPM I max. RCF	14,000 min^{-1} I 18,845	Cat. No.	INCLUSIVE
max. capactiy	24 x 2 ml		
run up I run down, braked in sec	15 I 15		
angle I max. noise level	45° I 59 dB (A)		
Cat. No.	1226-A		

Vessels							
capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0	0.5
Ø x L in mm	6x18	6 x 45	8 x 30	8x45	11x38	11x38	10.7x36
max. RCF [2]	18,845	18,845	18,845	18,845	18,845	18,845	17,749
radius in mm	86	86	86	86	86	86	81
Cat. No.	microliter tubes						Pediatric

Adapter							
boring Ø x L in mm	6 x 40	6 x 40	8 x 40	8 x 40	-	11.2x39	11.2x39
vessels per rotor	24	24	24	24	24	24	24
Cat. No.	2024	2024	2023	2023	2031 [7]	-	0788

ANGLE ROTOR, 12-PLACE | 1252-A

Rotor		Lid	
max. RPM I max. RCF	14,000 min^{-1} I 15,558	Cat. No.	INCLUSIVE
max. capactiy	12 x 2 ml		
run up I run down, braked in sec	15 I 15		
angle I max. noise level	45° I 54 dB (A)		
Cat. No.	1252-A		

Vessels							
capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0	0.5
Ø x L in mm	6x18	6 x 45	8 x 30	8x45	11x38	11x38	10.7x36
max. RCF [2]	15,558	15,558	15,558	15,558	15,558	15,558	14,462
radius in mm	71	71	71	71	71	71	66
Cat. No.	microliter tubes						Pediatric

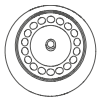
Adapter							
boring Ø x L in mm	6 x 40	6 x 40	8 x 40	8 x 40	-	11.2x39	11.2x39
vessels per rotor	12	12	12	12	12	12	12
Cat. No.	2024	2024	2023	2023	2031 [7]	-	0788

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.

7) For centrifugation at high speeds, we recommend to use conical, phenol-resistant adapters 2031.

ANGLE ROTOR, 18-PLACE | 1258-A



Rotor	
max. RPM I max. RCF	14,000 min^{-1} I 16,654
max. capactiy	18 x 2 ml
run up I run down, braked in sec	15 I 15
angle I max. noise level	45° I 56 dB (A)
Cat. No.	**1258-A**

+

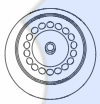
Lid	
Cat. No.	**INCLUSIVE**

Vessels							
capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0	0.5
Ø x L in mm	6x18	6 x 45	8 x 30	8x45	11x38	11x38	10.7x36
max. RCF [2]	16,654	16,654	16,654	16,654	16,654	16,654	15,558
radius in mm	76	76	76	76	76	76	71
Cat. No.	**microliter tubes**						**Pediatric**

+

Adapter							
boring Ø x L in mm	6 x 40	6 x 40	8 x 40	8 x 40	-	10.2x19	11.2x39
vessels per rotor	18	18	18	18	18	18	9
Cat. No.	**2024**	**2024**	**2023**	**2023**	**2031 [7]**	**-**	**0788**

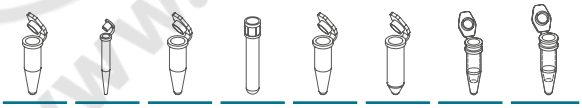
ANGLE ROTOR, 18-PLACE | 1213-A



Rotor	
max. RPM I max. RCF	14,000 min^{-1} I 16,654
max. capactiy	18 x 2 ml
run up I run down, braked in sec	16 I 15
angle I max. noise level	45° I 57 dB (A)
Cat. No.	**1213-A**

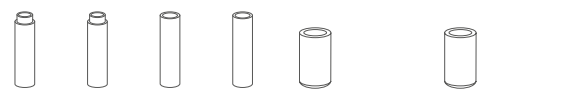
+

Lid bioseal [5]	
Cat. No.	**INCLUSIVE**



Vessels								
capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0	1.5	2.0
Ø x L in mm	6x18	6 x 45	8 x 30	8x45	11x38	11x38	11x38	11x38
max. RCF [2]	16,654	16,654	16,654	16,654	16,654	16,654	16,654	16,654
radius in mm	76	76	76	76	76	76	76	76
Cat. No.	**microliter tubes**						**micro spin columns**	

+



Adapter								
boring Ø x L in mm	6 x 40	6 x 40	8 x 40	8 x 40	10.2x19.3	11.2x39	10.2x19.3	11.2x39
vessels per rotor	18	18	18	18	18	18	18	18
Cat. No.	**2024**	**2024**	**2023**	**2023**	**2031 [7]**	**-**	**2031 [7]**	**-**

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.

7) For centrifugation at high speeds, we recommend to use conical, phenol-resistant adapters 2031.

MIKRO 200 | 200 R

Faster results in molecular biology

The MIKRO 200 and MIKRO 200 R are amongst the highest-speed microliter centrifuges in their class. Rotors are designed to spin microliter and PCR tubes. MIKRO 200 achieves a maximum RCF of 21,382 with up to 30 tubes, enabling rapid processing of samples and optimal separation, at low noise levels of 54 dB(A). This unit is available with refrigeration and a temperature range from -10 °C to +40 °C (MIKRO 200 R).

FEATURES

- RPM: 500 - 15,000 min^{-1} – adjustable in increments of 10
- Max. RCF: 21,382
- Max. capacity: 30 x 2.0 ml
- Choice of 4 rotors
- IVD-conform according to directive 98/79/EC
- Impulse key for short cycle mode
- Easy operation with keypad and control knob
- 4 program memories for more individuality
- 9 individual acceleration and deceleration stages
- Model 200 R coolable from -20 to +40 °C with pre-cooling function

FIELDS OF APPLICATION

- Hospitals
- Pediatric clinics
- Pharmaceutical laboratories
- Food analyzing laboratories
- University / Academic research
- Forensic laboratories
- Molecular diagnostics

Centrifuge packages for the model can be found on page 40

More information about the control panel can be found on page 198

IVD CONFORM
according to directive 98/79/EC

TECHNICAL DATA

	MIKRO 200 non-refrigerated	MIKRO 200 R refrigerated
voltage *)	200 – 240 V 1 ~	200 – 240 V 1 ~
frequency	50 – 60 Hz	50 Hz
consumption	240 VA	450 VA
emission, immunity	EN/IEC 61326-1, class B	EN/IEC 61326-1, class B
max. capacity	30 x 1.5 / 2.0 ml	30 x 1.5 / 2.0 ml
max. RPM	15,000 min^{-1}	15,000 min^{-1}
max. RCF	21,382	21,382
running time	1 – 99 min: 59 s, ∞ continuous run, short cycle mode (impulse button)	1 – 99 min: 59 s, ∞ continuous run, short cycle mode (impulse button)
dimesions (W x D x H)	275 x 344 x 260 mm	281 x 553 x 260 mm
weight	approx. 11.5 kg	approx. 28 kg
noise level	≤ 58 dB (A) with rotor 2434	≤ 51 dB (A) with rotor 2437
temperature control, infinitely variable	-	from -10 to +40 °C
Cat. No.	**2400**	**2405**
100 – 127 V 1 ~ / 50–60 Hz	2400-01	2405-01
consumption	270 VA	630 VA
emission, immunity	FCC class B	FCC class B

*) Other voltages on request.

AVAILABLE ROTORS

	ANGLE ROTORS	angle	max. RPM	max. capacity	Cat. No.	page
	angle rotor, 24-place	45°	15,000 min^{-1}	24 x 2 ml	**2434**	38
	angle rotor, 30-place	45° inside / 55° outside	15,000 min^{-1}	30 x 2 ml	**2437**	38
	angle rotor, 24-place for spin column kits	45°	15,000 min^{-1}	24 x 2 ml	**2428**	39
	angle rotor, 4-place	45°	15,000 min^{-1}	4 x 8 PCR strips	**2418-A**	39

ANGLE ROTOR, 24-PLACE | 2434

Rotor	
max. RPM I max. RCF	15,000 min^{-1} I 21,382
max. capactiy	24 x 2 ml
run up I run down, braked in sec	20 I 28
angle I max. noise level	45° I 53 dB (A)
temperature in °C[1]	+4
Cat. No.	**2434**

+

Lid bioseal [5]	
Cat. No.	**INCLUSIVE**

Vessels							
capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0	0.5
Ø x L in mm	6 x 18	6 x 45	8 x 30	8 x 45	11 x 38	11 x 38	10.7 x 36
max. RCF[2]	21,382	21,382	21,382	21,382	21,382	21,382	20,376
radius in mm	85	85	85	85	85	85	81
Cat. No.	microliter tubes						Pediatric

+

Adapter							
boring Ø x L in mm	6 x 40	6 x 40	8 x 40	8 x 40	-	11.2x42.6	11.2 x 39
vessels per rotor	24	24	24	24	24	24	12
Cat. No.	**2024**	**2024**	**2023**	**2023**	**2031[7]**	**-**	**0788**

ANGLE ROTOR, 30-PLACE | 2437

Rotor	
max. RPM I max. RCF	15,000 min^{-1} I 21,382
max. capactiy	30 x 2 ml
run up I run down, braked in sec	22 I 30
angle I max. noise level	45° inside / 55° outside I 51 dB (A)
temperature in °C[1]	+4
Cat. No.	**2437**

+

Lid bioseal [5]	
Cat. No.	**INCLUSIVE**

Vessels							
capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0	0.5
Ø x L in mm	6 x 18	6 x 45	8 x 30	8 x 45	11 x 38	11 x 38	10.7x36
max. RCF[2]	21,382	21,382	21,382	21,382	21,382	21,382	20,376
radius in mm	85	85	85	85	85	85	81
Cat. No.	microliter tubes						Pediatric

+

Adapter							
boring Ø x L in mm	6 x 40	6 x 40	8 x 40	8 x 40	-	11.2x41.3	11.2x39
vessels per rotor	30	30	30	30	30	30	15
Cat. No.	**2024**	**2024**	**2023**	**2023**	**2031[7]**	**-**	**0788**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
7) For centrifugation at high speeds, we recommend to use conical, phenol-resistant adapters. Cat. No. 2031.

ANGLE ROTOR, 24-PLACE | 2428

Rotor	
max. RPM I max. RCF	15,000 min^{-1} I 21,382
max. capactiy	24 x 2 ml
run up I run down, braked in sec	20 I 28
angle I max. noise level	45° I 53 dB (A)
temperature in °C[1]	+4
Cat. No.	**2428**

+

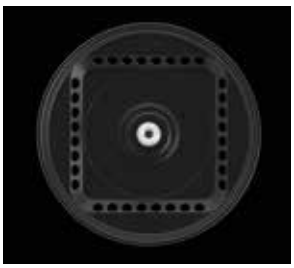
Lid bioseal [5]	
Cat. No.	**INCLUSIVE**

Vessels									
capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0	1.5	2.0	0.5
Ø x L in mm	6x18	6 x 45	8 x 30	8x45	11x38	11x38	11x38	11x38	10.7x36
max. RCF [2]	21,382	21,382	21,382	21,382	21,382	21,382	21,382	21,382	20,376
radius in mm	85	85	85	85	85	85	85	85	81
Cat. No.	microliter tubes						micro spin columns		Pediatric

+

Adapter									
boring Ø x L in mm	6 x 40	6 x 40	8 x 40	8 x 40	-	10.2x19	-	11.2x42.6	11.2x39
vessels per rotor	24	24	24	24	24	24	24	24	12
Cat. No.	**2024**	**2024**	**2023**	**2023**	**2031[7]**	**-**	**2031[7]**	**-**	**0788**

ANGLE ROTOR, 4-PLACE | 2418-A



Rotor	
max. RPM I max. RCF	15,000 min^{-1} I 14,338
max. capactiy	4 x 8 PCR strips
run up I run down, braked in sec	19 I 28
angle	45°
temperature in °C[1]	+4
Cat. No.	**2418-A**

+

Lid	
Cat. No.	**E3243**

Vessels		
capacity in ml	0.2	0.2
Ø x L in mm	6x18	-
max. RCF [2]	14,338	14,338
radius in mm	57	57
Cat. No.	**-**	**PCR strips**

+

Adapter		
boring Ø x L in mm	6.5x15.5	6.5x15.5
vessels per rotor	32	4 x 8
Cat. No.	**-**	**-**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
7) For centrifugation at high speeds, we recommend to use conical, phenol-resistant adapters. Cat. No. 2031.

PACKAGES

MIKRO 200
MICROLITER TUBES PACKAGE 1

- 1 x MIKRO 200 2400
- 1 x angle rotor 24-place, incl. lid bioseal 2434

2400SET1

number of vessels	volume (ml)	size (mm)	RPM	RCF
24	0.2 - 2.0	11 x 38	15,000	21,382
24	0.5	10.7 x 36	15,000	20,376

MIKRO 200
MIKROLITER TUBES PACKAGE 2

- 1 x MIKRO 200 2400
- 1 x angle rotor 30-place, incl. lid bioseal 2437

2400SET2

number of vessels	volume (ml)	size (mm)	RPM	RCF
30	0.2 - 2.0	11 x 38	15,000	20,627
30	0.5	10.7 x 36	15,000	20,124

MIKRO 200 R
MIKROLITER TUBES PACKAGE 1

- 1 x MIKRO 200 R 2405
- 1 x angle rotor 24-place, incl. lid bioseal 2434

2405SET1

number of vessels	volume (ml)	size (mm)	RPM	RCF
24	0.2 - 2,0	11 x 38	15,000	21,382
24	0.5	10.7 x 36	15,000	20,376

MIKRO 200 R
MIKROLITER TUBES PACKAGE 2

- 1 x MIKRO 200 R 2405
- 1 x angle rotor 30-place, incl. lid bioseal 2437

2405SET2

number of vessels	volume (ml)	size (mm)	RPM	RCF
30	0.2 - 2.0	11 x 38	15,000	21,382
30	0.5	10.7 x 36	15,000	20,124

MIKRO 200 R
SPIN COLUMN PACKAGE 3

- 1 x MIKRO 200 R 2405
- 1 x angle rotor 24-place, incl. lid bioseal 2428
  for spin column kits

2405SET3

number of vessels	volume (ml)	size (mm)	RPM	RCF
24	2.0	11 x 38	15,000	21,382

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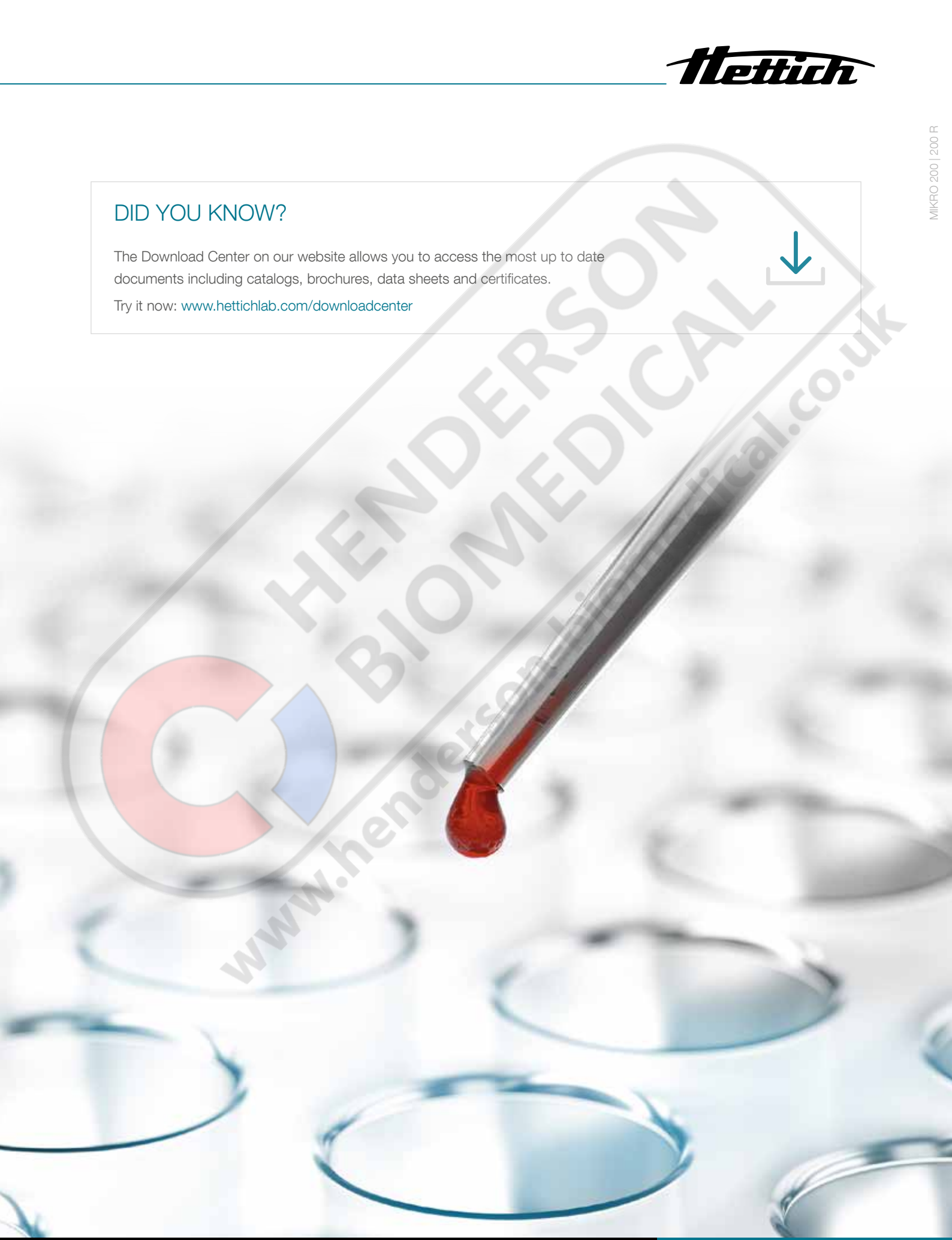


MIKRO 220 | 220 R

Fast and flexible

The MIKRO 220 spins at an unmatched speed of 18,000 RPM and delivers an RCF of 31,514 in just 26 seconds. Ultimate flexibility is provided by a choice of 7 different rotors from 0.2 ml microliter tubes to 50 ml conical tubes, allowing for numerous research applications on a single machine. This unit is available with refrigeration and a temperature range from -20 °C to +40 °C (MIKRO 220 R).

FEATURES

- RPM: 500 - 18,000 min^{-1} – adjustable in increments of 10
- Max. RCF: 31,514
- Max. capacity: 60 x 2.0 ml
- Compact, high-performance microlitre centrifuge
- Choice of 8 rotors
- IVD-conform according to directive 98/79/EC
- Impulse key for short cycle mode
- Easy operation with keypad and control knob
- Impulse key for short cycle mode
- 9 program memories for more individuality
- 9 individual acceleration and deceleration stages
- Model 220 R coolable from -20 to +40 °C with pre-cooling function

Centrifuge packages for the model can be found on page 48

More information about the control panel can be found on page 198

FIELDS OF APPLICATION

- Hospitals
- Pediatric clinics
- Pharmaceutical laboratories
- Food analyzing laboratories
- University / Academic research
- Forensic laboratories
- Molecular diagnostics

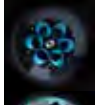
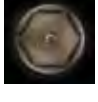
IVD CONFORM
according to directive 98/79/EC

TECHNICAL DATA

	MIKRO 220 non-refrigerated	MIKRO 220 R refrigerated
voltage *)	200 – 240 V 1 ~	200 – 240 V 1 ~
frequency	50 – 60 Hz	50 Hz
consumption	510 VA	850 VA
emission, immunity	EN/IEC 61326-1, class B	EN/IEC 61326-1, class B
max. capacity	48 x 1.5 / 2.0 ml, 6 x 50 ml	48 x 1.5 / 2.0 ml, 6 x 50 ml
max. RPM	18,000 min^{-1}	18,000 min^{-1}
max. RCF	31,514	31,514
running time	1 – 99 min: 59 s, ∞ continuous run, short cycle mode (impulse button)	1 – 99 min: 59 s, ∞ continuous run, short cycle mode (impulse button)
dimensions (W x D x H)	330 x 420 x 313 mm	330 x 650 x 313 mm
weight	approx. 21 kg	approx. 42 kg
noise level	≤ 58 dB (A) with rotor 1189-A	≤ 59 dB (A) with rotor 1016
temperatur control, infinitely variable	-	from -20 to +40 °C
Cat. No.	**2200**	**2205**
100 – 127 V 1 ~ / 60 Hz	2200-01	2205-01
consumption	510 VA	950 VA
emission, immunity	FCC class B	FCC class B

*) Other voltages on request.

AVAILABLE ROTORS

	SWING-OUT ROTORS	angle	max. RPM	max. capacity	Cat. No.	page
	Swing-out rotor, 24-place	90°	13,000 min^{-1}	24 x 2 ml	**1154-L**	45
	ANGLE ROTOR					
	Angle rotor, 24-place	45°	18,000 min^{-1}	24 x 2 ml	**1195-A**	44
	Angle rotor, 30-place	45°	14,000 min^{-1}	30 x 2 ml	**1189-A**	44
	Angle rotor, 48-place	45°	14,000 min^{-1}	48 x 2 ml	**1158-L**	45
	Angle rotor, 6-place	45°	6,000 min^{-1}	6 x 50 ml	**1016**	46
	Drum rotor, 6-place	90°	13,000 min^{-1}	60 x 2 ml	**1161**	46
	Angle rotor, 12-place	35°	6,000 min^{-1}	12 x 15 ml	**1015**	47
	Angle rotor, 6-place	45°	14,000 min^{-1}	6 x PCR strips	**1160**	47

ANGLE ROTOR, 24-PLACE | 1195-A

Rotor	
max. RPM I max. RCF	18,000 min^{-1} I 31,514
max. capacity	24 x 2 ml
run-up I run-down, braked in sec	26 I 23
angle	45°
temperature in °C[1]	+3
Cat. No.	**1195-A**

+

Lid bioseal [5]	
Cat. No.	**INCLUSIVE**

Vessels							
capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0	0.5
Ø x L in mm	6x18	6 x 45	8 x 30	8x45	11x38	11x38	10.7x36
max. RCF[2]	31,514	31,514	31,514	31,514	31,514	31,514	30,065
radius in mm	87	87	87	87	87	87	83
Cat. No.	**microliter tubes**						**Pediatric**

+

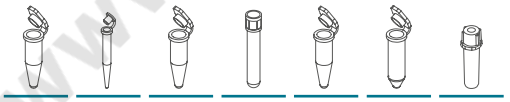
Adapter							
boring Ø x L in mm	6 x 40	6 x 40	8 x 40	8 x 40	10.2x19.3	11.2x40.8	11.2x39
vessels per rotor	24	24	24	24	24	24	12
Cat. No.	**2024**	**2024**	**2023**	**2023**	**2031[7]**	**-**	**0788**

ANGLE ROTOR, 30-PLACE | 1189-A

Rotor	
max. RPM I max. RCF	14,000 min^{-1} I 21,255
max. capacity	30 x 2 ml
run-up I run-down, braked in sec	20 I 22
angle I max. noise level	45° I 58 dB (A)
temperature in °C[1]	+3
Cat. No.	**1189-A**

+

Lid bioseal [5]	
Cat. No.	**INCLUSIVE**



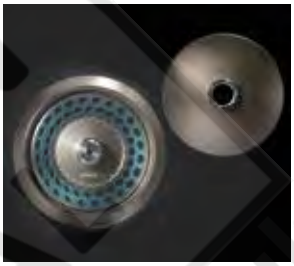
Vessels							
capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0	0.5
Ø x L in mm	6x18	6 x 45	8 x 30	8x45	11x38	11x38	10.7x36
max. RCF[2]	21,255	21,255	21,255	21,255	21,255	21,255	20,379
radius in mm	97	97	97	97	97	97	93
Cat. No.	**microliter tubes**						**Pediatric**

+

Adapter							
boring Ø x L in mm	6 x 40	6 x 40	8 x 40	8 x 40	10.2x19.3	11.2x40.9	11.2x39
vessels per rotor	30	30	30	30	30	30	15
Cat. No.	**2024**	**2024**	**2023**	**2023**	**2031[7]**	**-**	**0788**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
7) For centrifugation at high speeds, we recommend to use conical, phenol-resistant adapters. Cat. No. 2031.

ANGLE ROTOR, 48-PLACE | 1158-L



Rotor		Lid bioseal [5]	
max. RPM	14,000 min^{-1}	Cat. No.	INCLUSIVE
max. RCF	21,255 outside / 18,845 inside		
max. capacity	48 x 2 ml		
run-up I run-down, braked in sec	21 I 22		
angle I max. noise level	45° I 59 dB (A)		
temperature in °C[1]	-4		
Cat. No.	1158-L		

Vessels							
capacity in ml		0.2	0.4	0.5	0.8	1.5	2.0
Ø x L in mm		6 x 18	6 x 45	8 x 30	8 x 45	11 x 38	11 x 38
max. RCF [2]	outside / inside	21,255 / 18,845	21,255 / 18,845	21,255 / 18,845	21,255 / 18,845	21,255 / 18,845	21,255 / 18,845
radius in mm	outside / inside	97 / 86	97 / 86	97 / 86	97 / 86	97 / 86	97 / 86
Cat. No.		microliter tubes					

Adapter						
boring Ø x L in mm	6 x 40	6 x 40	8 x 40	8 x 40	10.2x19.3	11.4 x 39
vessels per rotor	48	48	48	48	48	48
Cat. No.	2024	2024	2023	2023	2031[7]	-

SWING-OUT ROTOR, 24-PLACE | 1154-L

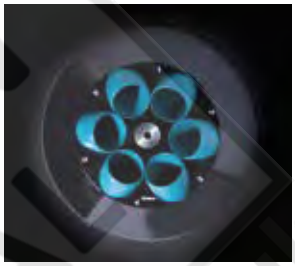
Rotor		Lid bioseal [5]	
max. RPM I max. RCF	13,000 min^{-1} I 18,516	Cat. No.	INCLUSIVE
max. capacity	24 x 2 ml		
run-up I run-down, braked in sec	25 I 26		
angle I max. noise level	90° I 60 dB (A)		
temperature in °C[1]	+1		
Cat. No.	1154-L		

Vessels							
capacity in ml		0.2	0.4	0.5	0.8	1.5	2.0
Ø x L in mm		6 x 18	6 x 45	8 x 30	8 x 45	11 x 38	11 x 38
max. RCF [2]		18,516	18,516	18,516	18,516	18,516	18,516
radius in mm		98	98	98	98	98	98
Cat. No.		microliter tubes					

Adapter						
boring Ø x L in mm	6 x 40	6 x 40	8 x 40	8 x 40	10.2x19.3	11.5x38.5
vessels per rotor	24	24	24	24	24	24
Cat. No.	2024	2024	2023	2023	2031[7]	-

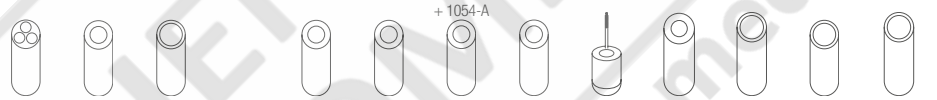
1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
7) For centrifugation at high speeds, we recommend to use conical, phenol-resistant adapters. Cat. No. 2031.

ANGLE ROTOR, 6-PLACE | 1016



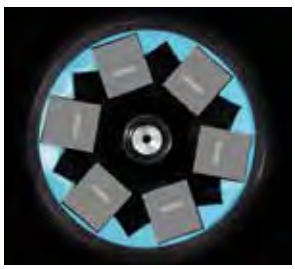
Rotor	
max. RPM I max. RCF	6,000 min^{-1} I 4,025
max. capacity	6 x 50 ml
run-up I run-down, braked in sec	14 I 17
angle I max. noise level	35° I 59 dB (A)
temperature in °C[1]	-20
Cat. No.	**1016**

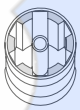
Vessels													
capacity in ml	7	15	25	50	9-10	10	1.6–5	4–7	5	15	50	30	50
Ø x L in mm	12x100	17x100	24x100	34x100	16x92	15x102	13 x 75	13 x 100	17x59	17x120	29x115	26x95	29x107
max. RCF[2]	3,944	3,783	3,703	4,025	3,783	3,783	2,978	3,783	3,622	3,824	3,824	3,703	3,904
radius in mm	98	94	92	100	94	94	74	94	90	95	95	92	97
Cat. No.	**tubes[2]**				**blood collection / urine tubes**				**-**	**tubes with screw cap**			



Adapter													
boring Ø x L in mm	13 x 92	17.5 x 95	26 x 88	35x96	17.5x95	17x51	17.5 x 95	17.5 x 95	17x51	17x98	30x98	26x88	29x95
vessels per rotor	18	6	6	6	6	6	6	6	6	6	3	6	6
Cat. No.	**1632**	**1635**	**1633**	**-**	**1635**	**1635**	**1635**	**1635**	**1649**	**1631**	**1641**	**1633**	**1634**

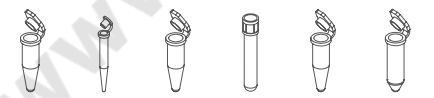
DRUM ROTOR, 6-PLACE | 1161



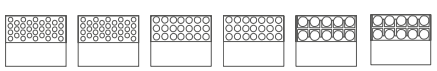


Rotor	
max. RPM I max. RCF	13,000 min^{-1} I 14,171
max. capacity	60 x 2 ml
run-up I run-down, braked in sec	17 I 18
angle I max. noise level	90° I 60 dB (A)
temperature in °C[1]	-3
Cat. No.	**1161**

Lid	
Cat. No.	**INCLUSIVE**



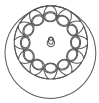
Vessels						
capacity in ml	0.2	0.4	0.5	0.8	1.5	2.0
Ø x L in mm	6x18	6 x 45	8 x 30	8x45	11x38	11x38
max. RCF[2]	14,171	14,171	14,171	14,171	14,171	14,171
radius in mm	75	75	75	75	75	75
Cat. No.	**microliter tubes**					



Adapter						
boring Ø x L in mm	6 x 40	6 x 40	8.4 x 43	8.4 x 43	10.8x37	10.8x37
vessels per rotor	192	192	126	126	60	60
Cat. No.	**1378**	**1378**	**1379**	**1379**	**1377**	**1377**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

ANGLE ROTOR, 12-PLACE | 1015

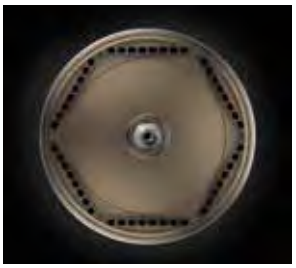


Rotor	
max. RPM I max. RCF	6,000 min^{-1} I 4,146
max. capacity	12 x 15 ml
run-up I run-down, braked in sec	14 I 16
angle I max. noise level	35° I 60 dB (A)
temperature in °C[1]	-20
Cat. No.	**1015**

Vessels															
capacity in ml	5	15	1.1–1.4	2.6–3.4	2.7–3	4.5–5	4.9	7.5–8.5	9–10	10	1.6–5	4-7	8.5–10	5	15
Ø x L in mm	12x75	17x100	8x66	13x65	11x66	11x92	13x90	15x92	16x92	15x102	13x75	13x100	16x100	17x59	17x120
max. RCF[2]	3,300	4,146	3,300	3,300	3,300	4,146	4,146	4,146	4,146	4,146	3,300	4,146	4,146	3,180	4,146
radius in mm	82	103	82	82	82	103	103	103	103	103	82	103	103	79	103
Cat. No.	**tubes[2]**		**blood collection / urine tubes**											**-**	**-**

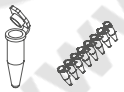
Adapter															
boring Ø x L in mm	13.5 x 60	17.7 x 88	13.5 x 60	13.5 x 60	13.5 x 60	17.7 x 88	17.7 x 88	17.7 x 88	17.7 x 88	17.7 x 88	13.5 x 60	13.5 x 79	17.7 x 88	17 x 25	17.7 x 88
vessels per rotor	12	12	12	12	12	12	12	12	12	12	12	12	12	12	6
Cat. No.	**1054-A**	**-**	**1054-A**	**1054-A**	**1054-A**	**-**	**-**	**-**	**-**	**-**	**1054-A**	**1058**	**-**	**1064**	**-**

ANGLE ROTOR, 6-PLACE | 1160



Rotor	
max. RPM I max. RCF	14,000 min^{-1} I 18,845
max. capactiy	6 x 8 PCR strips
run up I run down, braked in sec	20 I 22
angle I temperature in °C[1]	45° I -4
Cat. No.	**1160**

Lid	
Cat. No.	**1162**



Vessels		
capacity in ml	0.2	0.2
Ø x L in mm	6x18	-
max. RCF[2]	18,845	18,845
radius in mm	86	86
Cat. No.	**-**	**PCR strips**

Adapter		
boring Ø x L in mm	6.5 x 15.5	6.5 x 15.5
vessels per rotor	48	6 x 8
Cat. No.	**-**	**-**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

PACKAGES

MIKRO 220
MICROLITER TUBES PACKAGE 1

- 1 x MIKRO 220 — 2200
- 1 x angle rotor 24-place, incl. lid bioseal — 1195-A

2200SET1

number of vessels	volume (ml)	size (mm)	RPM	RCF
24	0.2 - 2.0	11 x 38	18,000	31,514
24	0.5	10.7 x 36	18,000	30,065

MIKRO 220
MIKROLITER TUBES PACKAGE 2

- 1 x MIKRO 220 — 2200
- 1 x angle rotor 30-place, incl. lid bioseal — 1189-A

2200SET2

number of vessels	volume (ml)	size (mm)	RPM	RCF
30	0.2 - 2.0	11 x 38	14,000	21,255
30	0.5	10.7 x 36	14,000	20,379

MIKRO 220 R
MIKROLITER TUBES PACKAGE 1

- 1 x MIKRO 220 R — 2205
- 1 x angle rotor 24-place, incl. lid bioseal — 1195-A

2205SET1

number of vessels	volume (ml)	size (mm)	RPM	RCF
24	0.2 - 2.0	11 x 38	18,000	31,514
24	0.5	10.7 x 36	18,000	30,065

MIKRO 220 R
MIKROLITER TUBES PACKAGE 2

- 1 x MIKRO 220 R — 2205
- 1 x angle rotor 30-place, incl. lid bioseal — 1189-A

2205SET2

number of vessels	volume (ml)	size (mm)	RPM	RCF
30	0.2 - 2.0	11 x 38	14,000	21,255
30	0.5	10.7 x 36	14,000	20,379

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BENCHTOP CENTRIFUGES

Specialists in diversity

ROTOFIX 32 A
on page 52

UNIVERSAL 320 | 320 R
on page 64

ROTINA 380 | 380 R
on page 88

03

ROTINA 420 | 420 R
on page 100

ROTANTA 460 | 460 R
on page 110

ROTOFIX 46 | 46 H
on page 128

ROTOFIX 32 A

Rugged and indispensable

For decades, the ROTOFIX 32 A has set the standard in daily lab routine thanks to its versatility and solid construction. The benchtop centrifuge spins sample volumes up to 6 x 94 ml, 40 blood collection tubes or 8 x 50 ml conical tubes with a simple user interface. Hettich's cytology rotors are compatible with most existing funnel/slide systems and have bio-containment lids.

FEATURES

- RPM: 500 - 6,000 min $^{-1}$ – adjustable in increments of 100
- Max. RCF: 4,226
- Max. capacity: 4 x 100 ml / 6 x 94 ml
- Choice of 9 rotors
- IVD-conform according to directive 98/79/EC
- Easy operation with keypad
- 2 individual deceleration stages

FIELDS OF APPLICATION

- Hospitals
- Veterinary laboratories
- Cell culture laboratories
- University / Academic research
- Pharmaceutical laboratories
- Physician's Office Laboratory (POL)

Centrifuge packages for the model can be found on page 63

More information about the control panel can be found on page 198

CYTO Cyto system available for this model. More information on page 178

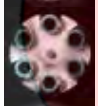
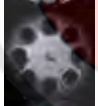
IVD CONFORM
according to directive 98/79/EC

TECHNICAL DATA

	ROTOFIX 32 A
voltage *)	208 – 240 V 1 ~
frequency	50 – 60 Hz
consumption	300 VA
emission, immunity	EN/IEC 61326-1, class B
max. capacity	4 x 100 ml / 6 x 94 ml
max. RPM	6,000 min^{-1}
max. RCF	4,226
running time	1–99 min, ∞ continuous run, short cycle mode (impulse button)
dimesions (W x D x H)	366 x 430 x 257 mm
weight	approx. 23 kg
noise level	52 dB (A) with rotor 1628
Cat. No.	**1206**
100 – 127 V 1 ~ / 50 – 60 Hz *)	1206-01
emission, immunity	FCC class B

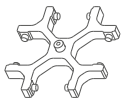
*) Other voltages on request.

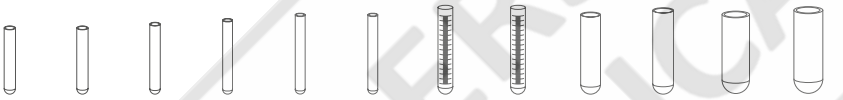
AVAILABLE ROTORS

SWING-OUT ROTORS	angle	max. RPM	max. capacity	Cat. No.	page
 swing-out rotor, 4-place	90°	4,000 min^{-1}	4 x 100 ml	**1624**	54
 swing-out rotor, 4-place	90°	4,000 min^{-1}	4 x 100 ml	**1324**	57
 swing-out rotor, 6-place	90°	4,000 min^{-1}	6 x 50 ml	**1619**	59
 swing-out rotor, 8-place	45°	4,000 min^{-1}	8 x 50 ml	**1617**	59
 swing-out rotor, 8-place	90°	4,000 min^{-1}	8 x 15 ml	**1611**	60
 swing-out rotor, 12-place	55° / 60° / 80°	4,000 min^{-1}	12 x 15 ml	**1628**	60

ANGLE ROTORS					
 angle rotor, 8-place	45°	4,000 min^{-1}	8 x 50 ml	**1418**	61
 angle rotor, 6-place	35°	6,000 min^{-1}	6 x 94 ml	**1620A**	62
 angle rotor, 12-place	35°	6,000 min^{-1}	12 x 15 ml	**1613**	63

SWING-OUT ROTOR, 4-PLACE | 1624

Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,451
max. capacity	4 x 50 ml
run-up I run-down, braked in sec	22 I 25
angle I max. noise level	90° I 55 dB (A)
Cat. No.	**1624**

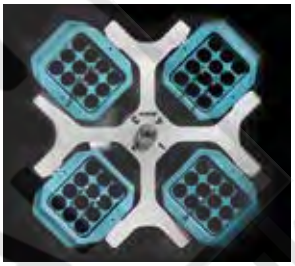
Vessels												
capacity in ml	5	5	6	7	9	9	15	15	20	25	45	50
Ø x L in mm	12 x 75	12 x 75	12 x 82	12 x 100	14 x 100	14 x 100	17 x 100	17 x 100	21 x 100	24 x 100	31 x 100	34 x 100
max. RCF [2]	2,057	2,164	2,308	2,308	2,308	2,415	2,308	2,451	2,361	2,451	2,361	2,451
radius in mm	115	121	129	129	129	135	129	137	132	137	132	137
Cat. No.	**tubes [2]**											
+ **Carrier**	with decanting aid		with decanting aid	with decanting aid		+ 0701						
boring Ø x L in mm	12.5 x 64.4	13.5 x 65	12.5 x 71.5	12.5 x 71.5	14.6 x 74	14.6 x 78	17.6 x 71.5	17.6 x 78	21.5 x 74	26 x 78	32 x 74	35 x 78
vessels per rotor	16	68	16	16	20	40	16	28	8	8	4	4
Cat. No.	**1369-91**	**1372**	**1369-92**	**1369-92**	**1370**	**1741**	**1369**	**1742**	**1346**	**1745**	**1345**	**1746**

Vessels														
capacity in ml	1.1 – 1.4	2.6 – 3.4	4 – 5.5	4.9	1.6 – 5	4 – 7	1.6 – 5	4 – 7	4 – 7	4 – 7	4 – 7	8.5 – 10	30	1 – 8
Ø x L in mm	8 x 66	13 x 65	15 x 75	13 x 90	13 x 75	16 x 75	13 x 75	16 x 75	13 x 100	13 x 100	13 x 100	16 x 100	26 x 95	simple / multiple
max. RCF [2]	2,415	2,325	2,325	2,451	2,129	2,361	2,325	2,325	2,361	2,361	2,451	2,451	2,451	1,646
radius in mm	135	130	130	137	119	132	130	130	132	132	137	137	137	92
Cat. No.	**blood collection / urine vessels**												**-**	**cyto chambers**
+ **Carrier**	+ 0701	+ 0716	+ 0716		+ 0768 [16]		+ 0716	+ 0716	+ 1058					
boring Ø x L in mm	14.6 x 78	17.6 x 78	17.6 x 78	14.6 x 78	14.6 x 78	17.6 x 71.5	17.6 x 78	17.6 x 78	17.6 x 71.5	14.6 x 74	13.5 x 78	17.6 x 71.5	26 x 78	-
vessels per rotor	40	28	28	40	40	16	28	28	16	20	28	16	8	4
Cat. No.	**1741**	**1742**	**1742**	**1741**	**1741**	**1369 [4]**	**1742**	**1742**	**1369 [4]**	**1370 [4]**	**1739**	**1369 [4]**	**1745**	**1660**

CYTO Cyto system available for this model.
More information on page 178

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
4) Please remove the spacer.
16) Packed in units of 10 pieces.
20) Vacutainers made of glass may not be used.

SWING-OUT ROTOR, 4-PLACE | 1624



Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 1,968
max. capacity	48 x 4 ml
run-up I run-down, braked in sec	22 I 25
angle I max. noise level	90° I 56 dB (A)
Cat. No.	**1624**

Bucket	
Cat. No.	**1366**

Vessels					
capacity in ml	1.5	2.0	1	3	4
Ø x L in mm	11 x 38	11 x 38	6 x 45	10 x 60	12 x 60
max. RCF [2]	1,968	1,968	1,950	1,932	1,932
radius in mm	110	110	109	108	108
Cat. No.	**microliter tubes**		**Rhesus**	**tubes [2]**	

Adapter					
boring Ø x L in mm	11.5 x 38	11.5 x 38	6.5 x 23	10.5 x 23	12.5 x 44
vessels per rotor	36	36	120	48	48
Cat. No.	**5277**	**5277**	**1357**	**1327**	**1326**

SWING-OUT ROTOR, 4-PLACE | 1624

Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,665
max. capacity	4 x 100 ml
run-up I run-down, braked in sec	22 I 25
angle I max. noise level	90° I 55 dB (A)
Cat. No.	**1624**

Bucket	
Lid bioseal [5]	1492
Cat. No.	**1481**

Vessels														
capacity in ml	0,5	1,5	2,0	1	3	5	6	7	9	15	25	50	94	100
Ø x L in mm	10.7 x 36	11 x 38	11 x 38	6 x 45	10 x 60	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	24 x 100	34 x 100	38 x 102	44 x 100
max. RCF [2]	2,379	2,451	2,451	2,594	2,630	2,558	2,558	2,558	2,540	2,540	2,433	2,415	2,612	2,558
radius in mm	133	137	137	145	147	143	143	143	142	142	136	135	146	143
Cat. No.	**Pediatric**	**microtubes**		**Rhesus**	**tubes [2]**									

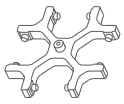
Adapter														
boring Ø x L in mm	11.2 x 38	11.2 x 38	11.2 x 38	6.5 x 34	10.5 x 43	13.4 x 48	13.4 x 48	13.4 x 48	17.6 x 91	17.6 x 91	25.2 x 87	35.2 x 87	38.5 x 92	45.9 x 98
vessels per rotor	20	20	20	108	36	20	20	20	16	16	4	4	4	4
Cat. No.	**1351**	**1351**	**1351**	**1339**	**1343**	**1383**	**1383**	**1383**	**1329**	**1329**	**1330**	**1331**	**1396**	**0761**

Spacer

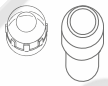
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

5) Tested by TÜV in conformity with DIN EN 61010, section 2 - 020.

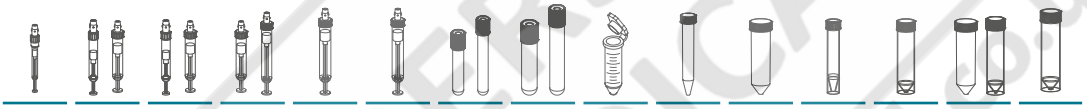
SWING-OUT ROTOR, 4-PLACE | 1624



Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,665
max. capacity	4 x 100 ml
run-up I run-down, braked in sec	22 I 25
angle I max. noise level	90° I 55 dB (A)
Cat. No.	**1624**



Bucket	
Lid bioseal [5]	1492
Cat. No.	**1481**



Vessels															
capacity in ml	1.1–1.4	2.7–5	2.6–4.9	4–8.5	9–10	10	1.6 – 7	4 – 10	5	15	50	12	25	30	50
Ø x L in mm	8 x 66	11x66/92	13x65/90	15x75/92	16x92	15x102	13x75/100	16x75/100	17x59	17x120	29x115	17 x 100	25 x 90	25 x 110	29 x 115
max. RCF [2]	2,576	2,558	2,558	2,576	2,540	2,665	2,558	2,522	2,665	2,665	2,665	2,665	2,343	2,665	2,665
radius in mm	144	143	143	144	142	149	143	141	149	149	149	149	131	149	149
Cat. No.	**blood collection / urine vessels**								**-**	**tubes with screw cap**					

Adapter														
boring Ø x L in mm	9x49	13.4x48	13.4x48	15.6x47	17.6x91	17.6x91	13.4x48	16.5x56	17x45	17x90	30x90	17x80	26x72	26x80	29.5x80
vessels per rotor	28	20	20	16	16	16	20	16	12	4	4	4	4	4	4
Cat. No.	**1457**	**1383**	**1383**	**1459**	**1329**	**1329 [4]**	**1383**	**1348**	**6341**	**1347**	**1384**	**6311**	**1363**	**1365**	**6318**

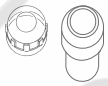
Vessels					
capacity in ml	10	30	50	85	30
Ø x L in mm	16 x 80	26 x 95	29x107	38x106	44x105
max. RCF [2]	2,522	2,451	2,630	2,612	2,540
radius in mm	141	137	147	146	142
Cat. No.	**tubes with screw cap**				**0534 [6]**

Adapter					
boring Ø x L in mm	16.5x56	26x83	29x93	38.5x92	45.9x98
vessels per rotor	16	4	4	4	4
Cat. No.	**1348**	**4417**	**4416**	**1396**	**0765**

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3) When using these tubes, bucket 1490 cannot be closed with lid 1492.
4) Please remove spacer.
5) Tested by TÜV in conformity with DIN EN 61010, section 2 - 020.
6) A rubber stopper for closing the tube for agitating or mixing is available under Cat. No. 0535. The tube may not be centrifuged with the stopper.

SWING-OUT ROTOR, 4-PLACE | 1324

Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,630
max. capacity	4x100 ml
run-up I run-down, braked in sec	27 I 30
angle I max. noise level	90° I 55 dB (A)
Cat. No.	**1324**



Bucket	
Lid bioseal [5]	1492
Cat. No.	**1490**

Vessels

capacity in ml	0.5	1.5	2.0	1	3	4	5	6	7	9	15	25	50	94	100
Ø x L in mm	10.7x36	11x38	11x38	6x45	10x60	10x88	12x75	12x82	12x100	14x100	17x100	24x100	34x100	38x102	44x100
max. RCF [2]	2,343	2,415	2,415	2,558	2,594	2,594	2,522	2,522	2,522	2,504	2,504	2,397	2,379	2,576	2,522
radius in mm	131	135	135	143	145	145	141	141	141	140	140	134	133	144	141
Cat. No.	**Pediatric**	**microliter tubes**		**Rhesus**	**tubes [2]**										

Adapter

boring Ø x L in mm	11.2x38	11.2x38	11.2x38	6.5x34	10.5x43	10.5x43	13.4x48	13.4x48	13.4x48	17.6x91	17.6x91	25.2x87	35.2x87	38.5x92	45.9x100.5
vessels per rotor	20	20	20	108	36	36	20	20	20	16	16	4	4	4	4
Cat. No.	**1351**	**1351**	**1351**	**1339**	**1343**	**1343**	**1383**	**1383**	**1383**	**1329**	**1329**	**1330**	**1331**	**1396**	**0761**

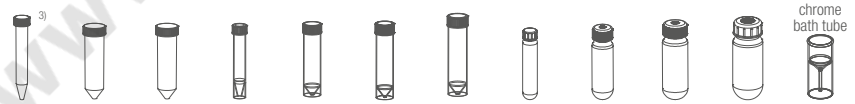
Vessels

capacity in ml	1.1 – 1.4	2.6 – 3.4	4.9	2.7 – 3	4.5 – 5	4 – 5.5	7.5 – 8.5	9 – 10	10	1.6 – 5	4 – 7	4 – 7	8.5 – 10	5	15
Ø x L in mm	8 x 66	13x65	13x90	11x66	11x92	15x75	15x92	16x92	15x102	13x75	13x100	16x75	16x100	17x59	17x120
max. RCF [2]	2,540	2,522	2,522	2,522	2,522	2,540	2,540	2,504	2,630	2,522	2,522	2,486	2,486	2,630	2,630
radius in mm	142	141	141	141	141	142	142	140	147	141	141	139	139	147	147
Cat. No.	**blood collection / urine vessels**													**-**	**-**

Adapter

boring Ø x L in mm	9x47	13.4x48	13.4x48	13.4x48	13.4x48	15.6x47	15.6x47	17.6x91	17.6x91	13.4x48	13.4x48	16.5x56	16.5x56	17x45	17x90
vessels per rotor	28	20	20	20	20	16	16	16	16	20	20	16	16	12	4
Cat. No.	**1457**	**1383**	**1383**	**1383**	**1383**	**1459**	**1459**	**1329**	**1329 [4]**	**1383**	**1383**	**1348**	**1348**	**6341**	**1347**

Vessels



capacity in ml	15	30	50	12	25	30	50	10	30	50	85	30
Ø x L in mm	17x120	25 x 110	29 x 115	17 x 100	25 x 90	25 x 110	29 x 115	16 x 80	26 x 95	29x107	38x106	44x105
max. RCF [2]	2,630	2,630	2,630	2,630	2,308	2,630	2,630	2,486	2,415	2,594	2,576	2,504
radius in mm	147	147	147	147	129	147	147	139	135	145	144	140
Cat. No.	**tubes with screw cap**											**0534 [6]**

Adapter

boring Ø x L in mm	17x107	26x80	30x90	17x80	26x72	26x80	29.5x80	16.5x56	26x83	29x93	38.5x92	45.9x100.5
vessels per rotor	12	4	4	4	4	4	4	16	4	4	4	4
Cat. No.	**1356**	**1365**	**1384**	**6311**	**1363**	**1365**	**6318**	**1348**	**4417**	**4416**	**1396**	**0765**

SWING-OUT ROTOR, 4-PLACE | 1324

Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,612
max. capacity	4 x 50 ml
run-up I run-down, braked in sec	27 I 30
angle	90° I 56 dB (A)
Cat. No.	**1324**

+

Bucket	
Cat. No.	**1398**

Vessels															
capacity in ml	5	6	7	9	15	2.6–3.4	2.7–3	4–5.5	4.5–5	4.9	9 – 10	10	1.6 – 5	4 – 7	4 – 7
Ø x L in mm	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	13 x 65	11 x 66	15 x 75	11 x 92	13 x 90	16 x 92	15 x 102	13 x 75	13 x 100	16 x 75
max. RCF [2]	2,486	2,486	2,486	2,522	2,522	2,486	2,486	2,272	2,486	2,486	2,522	2,522	2,486	2,486	2,397
radius in mm	139	139	139	141	141	139	139	127	139	139	141	141	139	139	134
Cat. No.	**tubes [2]**					**blood collection / urine vessels**									

+

Adapter															
boring Ø x L in mm	13.4x57.5	13.4x57.5	13.4x57.5	17.5 x 81	17.5 x 81	13.4x57.5	13.4x57.5	17.5 x 81	13.4x57.5	13.4x57.5	17.5 x 81	17.5 x 81	13.4x57.5	13.4x57.5	17.5 x 81
vessels per rotor	20	20	20	16	16	20	20	16	20	20	16	16	20	20	16
Cat. No.	**1486**	**1486**	**1486**	**1482A**	**1482A**	**1486**	**1486**	**1482A**	**1486**	**1486**	**1482A**	**1482A**	**1486**	**1486**	**1482A**

Vessels						
capacity in ml	8.5 – 10	12	15	50	12	50
Ø x L in mm	16 x 100	17 x 102	17 x 120	29 x 115	17 x 100	29 x 115
max. RCF [2]	2,397	2,451	2,612	2,576	2,522	2,576
radius in mm	134	137	146	144	141	144
Cat. No.	**blood collection / urine vessels**		**tubes with screw cap**			

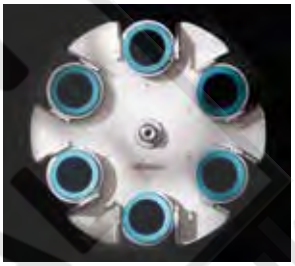
+

Adapter						
boring Ø x L in mm	17.5 x 81	17.5 x 74	17 x 100	30 x 98	17.5 x 81	30 x 98
vessels per rotor	16	12	16	4	16	4
Cat. No.	**1482A**	**1487**	**1483A**	**1484**	**1482A**	**1484 [4]**

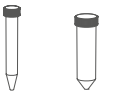
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

4) Please remove spacer.

SWING-OUT ROTOR, 6-PLACE | 1619



Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,701
max. capacity	6 x 50 ml
run-up I run-down, braked in sec	22 I 25
angle I max. noise level	90° I 54 dB (A)
Cat. No.	**1619**



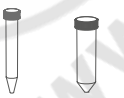
Vessels		
capacity in ml	15	50
Ø x L in mm	17 x 120	29 x 115
max. RCF [2]	2,701	2,701
radius in mm	151	151
Cat. No.	**tubes with screw cap**	

+

Adapter		
boring Ø x L in mm	17 x 84	30 x 87.5
vessels per rotor	6	6
Cat. No.	**1462-A**	**-**

SWING-OUT ROTOR, 8-PLACE | 1617

Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,469
max. capacity	8 x 50 ml
run-up I run-down, braked in sec	22 I 25
angle I max. noise level	45° I 53 dB (A)
Cat. No.	**1617**



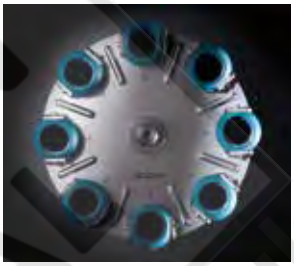
Vessels		
capacity in ml	15	50
Ø x L in mm	17 x 120	29 x 115
max. RCF [2]	2,469	2,469
radius in mm	138	138
Cat. No.	**tubes with screw cap**	

+

Adapter		
boring Ø x L in mm	17 x 84	30 x 94.5
vessels per rotor	8	8
Cat. No.	**1462-A**	**-**

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

SWING-OUT ROTOR, 8-PLACE | 1611



Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,415
max. capacity	8 x 15 ml
run-up I run-down, braked in sec	22 I 25
angle I max. noise level	90° I 53 dB (A)
Cat. No.	**1611**

Vessels														
capacity in ml	5	6	7	10	15	2.6–3.4	2.7–3	4–5.5	4.5–5	7.5 – 8.5	1.6 – 5	4 – 7	4 – 7	8.5 – 10
Ø x L in mm	12 x 75	12 x 82	12 x 100	13 x 100	17 x 100	13 x 65	11 x 66	15 x 75	11 x 92	15 x 92	13 x 75	13 x 100	16 x 75	16 x 100
max. RCF [2]	1,914	1,914	2,415	2,415	2,415	1,914	1,914	1,914	2,415	2,415	1,914	2,415	1,914	2,415
radius in mm	107	107	135	135	135	107	107	107	135	135	107	135	107	135
Cat. No.	**tubes [2]**					**blood collection / urine vessels**								

Bucket														
boring Ø x L in mm	13 x 53	13 x 53	13.2 x 81	13.2 x 81	17.5 x 81	13 x 53	13 x 53	17.5 x 53	13.2 x 81	17.5 x 81	13 x 53	13.2 x 81	17.5 x 53	17.5 x 81
vessels per rotor	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Cat. No.	**1131-A**	**1131-A**	**1643**	**1643**	**1644**	**1131-A**	**1131-A**	**1132-A**	**1643**	**1644**	**1131-A**	**1643**	**1132-A**	**1644**

SWING-OUT ROTOR, 12-PLACE | 1628

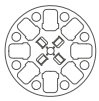
Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,683
max. capacity	12 x 15 ml
run-up I run-down, braked in sec	22 I 25
angle I max. noise level	55° / 60° / 80° I 52 dB (A)
Cat. No.	**1628**

Vessels									
capacity in ml	5	15	2.6–3.4	2.7–3	4–5.5	7.5 – 8.5	1.6 – 5	4 – 7	8.5 – 10
Ø x L in mm	12 x 75	17 x 100	13 x 65	11 x 66	15 x 75	15 x 92	13 x 75	16 x 75	16 x 100
max. RCF [2]	2,236	2,683	2,236	2,236	2,254	2,683	2,236	2,254	2,683
radius in mm	125	150	125	125	126	150	125	126	150
Cat. No.	**tubes [2]**		**blood collection / urine vessels**						

Bucket									
boring Ø x L in mm	13.2 x 53	17.5 x 79	13.2 x 53	13.2 x 53	17.5 x 53	17.5 x 79	13.2 x 53	17.5 x 53	17.5 x 79
vessels per rotor	12	12	12	12	12	12	12	12	12
Cat. No.	**1127-A**	**1621**	**1127-A**	**1127-A**	**1122**	**1621**	**1127-A**	**1122**	**1621**

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

ANGLE ROTOR, 8-PLACE | 1418



Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,612
max. capacity	8 x 50 ml
run-up I run-down, braked in sec	36 I 43
angle I max. noise level	45° I 53 dB (A)
Cat. No.	**1418**

Vessels															
capacity in ml	5	15	1.1 – 1.4	2.6 – 3.4	2.7 – 3	9 – 10	1.6 – 5	4 – 7	8.5 – 10	12	15	50	12	50	50
Ø x L in mm	12 x 75	17 x 100	8 x 66	13 x 65	11 x 66	16 x 92	13 x 75	13 x 100	16 x 100	17 x 102	17 x 120	29 x 115	17 x 100	29 x 115	29 x 107
max. RCF [2]	2,182	2,540	2,182	2,182	2,182	2,540	2,182	2,612	2,540	2,540	2,594	2,486	2,540	2,486	2,486
radius in mm	122	142	122	122	122	142	122	146	142	142	145	139	142	139	139
Cat. No.	**tubes [2]**		**blood collection / urine vessels**								**tubes with screw cap**				
+	+ 1054-A	+ 0716	+ 1054-A	+ 1054-A	+ 1054-A	+ 0716	+ 1054-A		+ 0716	+ 0716	+ E2109	+ E2110-A	+ 0716		
Carrier															
boring Ø x L in mm	17.4 x 91	17.4 x 91	17.4 x 91	17.4 x 91	17.4 x 91	17.4 x 91	17.4 x 91	17.4 x 91	17.4 x 91	17.4 x 91	17.4 x 91	30.2 x 92	17.4 x 91	30.2 x 92	30.2 x 92
vessels per rotor	32	32	32	32	32	32	32	32	32	32	32	8	32	8	8
Cat. No.	**1467**	**1467**	**1467**	**1467**	**1467**	**1467**	**1467**	**1467**	**1467**	**1467**	**1467**	**1468**	**1467**	**1468**	**1468**

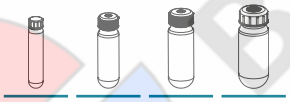
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

ANGLE ROTOR, 6-PLACE | 1620A

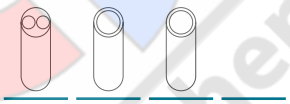
Rotor	
max. RPM I max. RCF	6,000 min^{-1} I 4,226
max. capacity	6 x 94 ml
run-up I run-down, braked in sec	19 I 22
angle I max. noise level	35° I 53 dB (A)
Cat. No.	**1620A**

Vessels															
capacity in ml	0.5	1.5	2.0	3	15	50	94	7.5 – 8.5	9 – 10	10	8.5 – 10	5	15	50	50
Ø x L in mm	10.7 x 36	11 x 38	11 x 38	10 x 60	17 x 100	34 x 100	38 x 102	15 x 92	16 x 92	15 x 102	16 x 100	17 x 59	17 x 120	29 x 115	29 x 115
max. RCF [2]	4,105	4,105	4,105	4,105	3,904	4,146	4,226	3,904	3,904	3,904	3,904	3,824	3,985	3,985	3,985
radius in mm	102	102	102	102	97	103	105	97	97	97	97	95	99	99	99
Cat. No.	**Pediatric**	**microliter tubes**			**tubes [2]**			**blood collection / urine vessels**				**-**	**tubes with screw cap**		

Adapter															
boring Ø x L in mm	11.4 x 39	11.4 x 39	11.4 x 39	11.4 x 39	17.5 x 92	35 x 89	38.6 x 90.2	17.5 x 92	17.5 x 92	17.5 x 92	17.5 x 92	17 x 51	17 x 106	29.8 x 97	-
vessels per rotor	24	24	24	24	6	6	6	6	6	6	6	6	6	6	6
Cat. No.	**1449**	**1449**	**1449**	**1449**	**1451**	**1463**	**-**	**1451**	**1451**	**1451**	**1451**	**1476**	**1466**	**1454**	**1646 [8]**



Vessels				
capacity in ml	10	30	50	85
Ø x L in mm	16 x 80	26 x 85	29 x 107	38 x 106
max. RCF [2]	3,904	3,824	4,025	4,226
radius in mm	97	95	100	105
Cat. No.	**tubes with screw cap**			

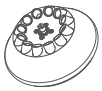


Adapter				
boring Ø x L in mm	16.5 x 74	26 x 85	29 x 92	38.6 x 90.2
vessels per rotor	12	6	6	6
Cat. No.	**1448**	**1447**	**1446**	**-**

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

8) Adapter (Set), 6-place: for conical 50 ml tubes with screw cap.

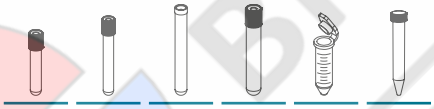
ANGLE ROTOR, 12-PLACE | 1613



Rotor	
max. RPM I max. RCF	6,000 min^{-1} I 4,146
max. capacity	12 x 15 ml
run-up I run-down, braked in sec	13 I 15
angle I max. noise level	35° I 55 dB (A)
Cat. No.	**1613**

Vessels													
capacity in ml	0.5	4	5	6	15	1.1–1.4	2.6–3.4	2.7–3	4.5–5	4.9	7.5 – 8.5	9 – 10	10
Ø x L in mm	10.7 x 36	10 x 88	12 x 75	12 x 82	17 x 100	8 x 66	13 x 65	11 x 66	11 x 92	13 x 90	15 x 92	16 x 92	15 x 102
max. RCF [2]	2,777	3,502	3,300	3,300	4,146	3,300	3,300	3,300	4,146	4,146	4,146	4,146	4,146
radius in mm	69	87	82	82	103	82	82	82	103	103	103	103	103
Cat. No.	**Pediatric**	**tubes [2]**				**blood collection / urine vessels**							

Adapter													
boring Ø x L in mm	11 x 35	11.5 x 67.5	13.5 x 60	13.5 x 60	17.7 x 88	13.5 x 60	13.5 x 60	13.5 x 60	17.7 x 88	17.7 x 88	17.7 x 88	17.7 x 88	17.7 x 88
vessels per rotor	12	12	12	12	12	12	12	12	12	12	12	12	12
Cat. No.	**2 x 1063-6 (6 pcs.)**	**6305**	**1054-A**	**1054-A**	**-**	**1054-A**	**1054-A**	**1054-A**	**-**	**-**	**-**	**-**	**-**



Vessels						
capacity in ml	1.6 – 5	4 – 7	8	8.5 – 10	5	15
Ø x L in mm	13 x 75	13 x 100	16 x 125	16 x 100	17 x 59	17 x 120
max. RCF [2]	3,300	4,146	4,146	4,146	3,180	4,146
radius in mm	82	103	103	103	79	103
Cat. No.	**blood collection / urine vessels**				**-**	**-**

Adapter						
boring Ø x L in mm	13.5 x 60	13.5 x 79	17.7 x 88	17.7 x 88	17 x 25	17.7 x 88
vessels per rotor	12	12	6	12	12	6
Cat. No.	**1054-A**	**1058**	**-**	**-**	**1064**	**-**

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers.
The max. RCF for glass tubes annotated with footnote 2) is 4,000.

PACKAGES

ROTOFIX 32 A BLOOD TUBE PACKAGE 1*		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x ROTOFIX 32 A centrifuge	1206	20	1.6 - 7	13 x 75 / 100	4,000	2,558
- 1 x swing-out rotor, 4-place	1624	16	4 - 10	16 x 75 / 100	4,000	2,522
- 4 x bucket	1481					
- 4 x lid (bioseal)	1492					
- 4 x adapter, 5-place	1383					
- 4 x adapter, 4-place	1348					
1206SET1						

UNIVERSAL 320 | 320 R

A universal choice

The UNIVERSAL 320 is a compact, versatile and indispensable general purpose centrifuge. Excellent performance and a comprehensive range of accessories enable the UNIVERSAL 320 to carry out virtually any centrifuging tasks including plates, blood tubes, cell culture, microliter and cytology. This unit is available with refrigeration and a temperature range from -20 °C to +40 °C (UNIVERSAL 320 R).

FEATURES

- RPM: 500 - 16,000 min $^{-1}$ – adjustable in increments of 10
- Max. RCF: 24,900
- Max. capacity: 4 x 200 ml / 6 x 94 ml
- The universal choice among the benchtop centrifuges
- Choice of 18 rotors
- IVD-conform according to directive 98/79/EC
- Noise level of 48 dB(A) with angle rotor 1611
- Easy operation with keypad and control knob
- Impulse key for short cycle mode
- 9 program memories
- 9 individual acceleration and 10 deceleration stages
- Model 320 R coolable from -20 to +40 °C with pre-cooling function

FIELDS OF APPLICATION

- Small laboratories
- Hospitals
- Veterinary laboratories
- Cell Culture laboratories
- University / Academic research
- Pharmaceutical laboratories
- Food analyzing laboratories
- Physicians Office Lab (POL)

Centrifuge packages for the model can be found on page 86

More information about the control panel can be found on page 198

CYTO Cyto system available for this model. More information on page 178

IVD CONFORM
according to directive 98/79/EC

UNIVERSAL 320

UNIVERSAL 320 R

TECHNICAL DATA

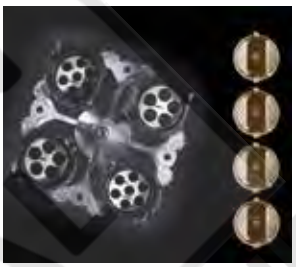
	UNIVERSAL 320 non-refrigerated	UNIVERSAL 320 R refrigerated	
voltage *)	200 – 240 V 1 ~	200 – 240 V 1 ~	240 V 1 ~
frequency	50 – 60 Hz	50 – 60 Hz	60 Hz
consumption	400 VA	800 VA	
emission, immunity	EN/IEC 61326-1, class B	EN/IEC 61326-1, class B	
max. capacity	4 x 200 ml / 6 x 94 ml	4 x 200 ml / 6 x 94 ml	
max. RPM	16,000 min^{-1}	16,000 min^{-1}	
max. RCF	24,900	24,900	
running time	1sec – 99 min: 59 sec, ∞ continuous run, short cycle mode (impulse button)	1sec – 99 min: 59 sec, ∞ continuous run, short cycle mode (impulse button)	
dimensions (W x D x H)	401 x 529 x 346 mm	407 x 698 x 346 mm	
weight	approx. 31 kg	approx. 52 kg	
noise level	48 dB (A) with rotor 1611	50 dB (A) with rotor 1611	
temperature control, infinitely variable	-	from -20 to +40 °C	
Cat. No.	**1401**	**1406**	
100 – 127 V 1 ~ / 50 – 60 Hz *)	1401-01	1406-01	
consumption	400 VA	950 VA	
emission, Immunity	FCC class B	FCC class B	

*) Other voltages on request.

AVAILABLE ROTORS

SWING-OUT ROTORS	angle	max. RPM	max. capacity	Cat. No.	page
swing-out rotor, 4-places	90°	4,500 min^{-1}	4 x 200 ml	**1554**	66
swing-out rotor, 4-places	90°	5,000 min^{-1}	4 x 100 ml	**1494**	69
swing-out rotor, 4-places	90°	4,000 min^{-1}	4 x 100 ml	**1624**	72
swing-out rotor, 4-places	90°	4,500 min^{-1}	4 x 100 ml	**1324**	75
swing-out rotor, 8-places	90°	4,000 min^{-1}	8 x 15 ml	**1611**	77
swing-out rotor, 12-places	55° / 60° / 80°	4,000 min^{-1}	12 x 15 ml	**1628**	77
swing-out rotor, 8-places	45°	5,000 min^{-1}	8 x 50 ml	**1617**	78
swing-out rotor, 6-places	90°	4,000 min^{-1}	6 x 50 ml	**1619**	78
swing-out rotor, 2-places	90°	4,000 min^{-1}	10 plates	**1460**	79
swing-out rotor, 24-places	90°	13,000 min^{-1}	24 x 2 ml	**1555**	79
ANGLE ROTORS					
angle rotor, 24-places	50°	16,000 min^{-1}	24 x 2 ml	**1552**	80
angle rotor, 30-places	45°	14,150 min^{-1}	30 x 2 ml	**1553**	80
angle rotor, 64-places	45°	13,000 min^{-1}	64 x 0.2 ml	**1551**	81
angle rotor, 18-places	45°	14,150 min^{-1}	18 x 5 ml	**1627**	81
angle rotor, 6-places	35°	9,000 min^{-1}	6 x 94 ml	**1556**	82
angle rotor, 12-places	35°	6,000 min^{-1}	12 x 15 ml	**1613**	83
angle rotor, 12-places	35°	12,000 min^{-1}	12 x 15 ml	**1615**	84
angle rotor, 8-places	45°	4,500 min^{-1}	8 x 50 ml	**1418**	85

SWING-OUT ROTOR, 4-PLACE | 1554



Rotor	
max. RPM I max. RCF	4,500 min^{-1} I 3,328
max. capacity	4 x 200 ml
run-up I run-down, braked in sec	28 I 31
angle I max. noise level	90° I 60 dB (A)
temperature in °C [1]	-8
Cat. No.	**1554**

Bucket with clamp lock	
Lid bioseal [5]	1561
Cat. No.	**1560**

Bucket without clamp lock [14]	
Cat. No.	**1565**

Vessels	1.5	2.0	5	5	6	7	9	15	15	25	50	94	100	125	150
capacity in ml	1.5	2.0	5	5	6	7	9	15	15	25	50	94	100	125	150
Ø x L in mm	11 x 38	11 x 38	17 x 59	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	18 x 102	24 x 100	34 x 100	38 x 102	44 x 100	51 x 100	51 x 116
max. RCF [2]	3,328	2,332	3,328	3,215	3,215	3,215	3,215	3,215	3,260	3,056	3,147	3,260	3,147	3,328	3,328
radius in mm	147	103	147	142	142	142	142	142	144	135	139	144	139	147	147
Cat. No.	**microliter tubes**			**tubes [2]**										**-**	**-**
Adapter															
boring Ø x L in mm	11.5 x 39	11.5 x 39	17 x 52	13.5 x 60	13.5 x 60	13.5 x 60	17.5 x 60	17.5 x 60	18.5 x 74	25.2 x 66	35.2 x 69	38.5 x 74	45.5 x 69	52 x 77	52 x 77
vessels per rotor	56	56	16	28	28	28	20	20	16	4	4	4	4	4	4
Cat. No.	**1571**	**1571**	**1593**	**1589**	**1589**	**1589**	**1588**	**1588**	**1572**	**1573**	**1574**	**1575**	**1576**	**1594**	**1594**

Vessels	200	1.1 – 1.4	2.6 – 3.4	4.9	2.7 – 3	4.5 – 5	4 – 5.5	7.5 – 8.5	9 – 10	10	1.6 – 5	4 – 7	4 – 7	8.5 – 10	12
capacity in ml	200	1.1 – 1.4	2.6 – 3.4	4.9	2.7 – 3	4.5 – 5	4 – 5.5	7.5 – 8.5	9 – 10	10	1.6 – 5	4 – 7	4 – 7	8.5 – 10	12
Ø x L in mm	56 x 112	8 x 66	13 x 65	13 x 90	11 x 66	11 x 92	15 x 75	15 x 92	16 x 92	15 x 102	13 x 75	13 x 100	16 x 75	16 x 100	17 x 102
max. RCF [2]	3,328	3,215	3,215	3,215	3,215	3,215	3,215	3,215	3,215	3,215	3,215	3,215	3,215	3,215	3,215
radius in mm	147	142	142	142	142	142	142	142	142	142	142	142	142	142	142
Cat. No.	**0555**	**blood collection / urine vessels**													
Adapter															
boring Ø x L in mm	57 x 77	13.5 x 60	13.5 x 60	13.5 x 60	13.5 x 60	13.5 x 60	17.5 x 60	17.5 x 60	17.5 x 60	17.5 x 60	13.5 x 60	13.5 x 60	17.5 x 60	17.5 x 60	17 x 74
vessels per rotor	4	28	28	28	28	28	20	20	20	20	28	28	20	20	12
Cat. No.	**-**	**1589**	**1589**	**1589**	**1589**	**1589**	**1588**	**1588**	**1588**	**1588**	**1589**	**1589**	**1588**	**1588**	**1591**

Vessels	11	15	15	30	50	12	25	30	50	10	30	50	85	94	30
capacity in ml	11	15	15	30	50	12	25	30	50	10	30	50	85	94	30
Ø x L in mm	16 x 110	17 x 120	17 x 120	25 x 110	29 x 115	17 x 100	25 x 90	15 x 110	29 x 115	16 x 80	26 x 95	29 x 107	38 x 106	38 x 102	44 x 105
max. RCF [2]	3,260	3,328	3,328	3,328	3,328	3,260	3,328	3,328	3,328	3,215	3,260	3,260	3,260	3,260	3,192
radius in mm	144	147	147	147	147	144	147	147	147	142	144	144	144	144	141
Cat. No.	**Nunc®**	**tubes with screw cap**													**0534 [6]**
Adapter	+ E 2109														
boring Ø x L in mm	17.5 x 74	17 x 77	17 x 77	26 x 77	30 x 77	17.5 x 74	26 x 65	26 x 65	30 x 77	16.5 x 60	26 x 74	29 x 74	38.5 x 74	38.5 x 74	45 x 71
vessels per rotor	16	8	12	4	4	16	4	4	4	20	4	4	4	4	4
Cat. No.	**1581**	**1577**	**1595**	**1578**	**1579**	**1581**	**1582**	**1582**	**1583**	**1584**	**1585**	**1586**	**1575**	**1575**	**1587**

SWING-OUT ROTOR, 4-PLACE | 1554

Rotor	
max. RPM I max. RCF	4,500 min^{-1} I 3,328
max. capacity	4 x 50 ml
run-up I run-down, braked in sec	28 I 31
angle I max. noise level	90° I 58 dB (A)
temperature in °C [1]	-8
Cat. No.	**1554**

Bucket	
Cat. No.	**1559**

Vessels															
capacity in ml	5	6	7	8	9	15	2.6 – 3.4	2.7 – 3	4 – 5.5	4.5 – 5	4.9	9 – 10	10	1.6 – 5	4 – 7
Ø x L in mm	12 x 75	12 x 82	12 x 100	16 x 125	14 x 100	17 x 100	13 x 65	11 x 66	15 x 75	11 x 92	13 x 90	16 x 92	10 x 102	13 x 75	13 x 100
max. RCF [2]	3,192	3,192	3,192	3,328	3,260	3,260	3,192	3,192	3,124	3,192	3,192	3,260	3,260	3,192	3,192
radius in mm	141	141	141	147	144	144	141	141	138	141	141	144	144	141	141
Cat. No.	**tubes [2]**						**blood collection / urine vessels**								
Adapter									+ 0715						
boring Ø x L in mm	13.4 x 57.5	13.4 x 57.5	13.4 x 57.5	16.4 x 82	17.5 x 81	17.5 x 81	13.4 x 57.5	13.4 x 57.5	17.5 x 81	13.4 x 57.5	13.4 x 57.5	17.5 x 81	17.5 x 81	13.4 x 57.5	13.4 x 57.5
vessels per rotor	20	20	20	16	16	16	20	20	16	20	20	16	16	20	20
Cat. No.	**1486**	**1486**	**1486**	**1488**	**1482A**	**1482A**	**1486**	**1486**	**1482A**	**1486**	**1486**	**1482A**	**1482A**	**1486**	**1486**

Vessels								
capacity in ml	4 – 7	8.5 – 10	8	12	15	50	12	50
Ø x L in mm	16 x 75	16 x 100	16 x 125	17 x 102	17 x 120	29 x 115	17 x 100	29 x 115
max. RCF [2]	3,124	3,260	3,328	3,147	3,351	3,305	3,260	3,305
radius in mm	138	144	147	139	148	146	144	146
Cat. No.	**blood- / urine vessels**				**tubes with screw cap**			
Adapter	+ 0715	+ 0715						
boring Ø x L in mm	17.5 x 81	17.5 x 81	17.5 x 81	17.5 x 74	17 x 100	30 x 98	17.5 x 81	30 x 98
vessels per rotor	16	16	16	12	16	4	16	4
Cat. No.	**1482A**	**1482A**	**1482A [4]**	**1487**	**1483A**	**1484**	**1482A**	**1484 [4]**

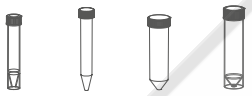
1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3.2) When using these tubes, bucket 1560 cannot be closed with lid 1561.
4) Please remove the spacer.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
6) A rubber stopper for closing the tube for agitating or mixing is available under Cat. No. 0535. The tube may not be centrifuged with the stopper.
14) With the E3922 add-on kit and the 1561 lid, the 1565 carrier can be converted at a later time to a 1560 carrier with single-hand clamp lock.

SWING-OUT ROTOR, 4-PLACE | 1554

Rotor	
max. RPM I max. RCF	4,500 min^{-1} I 3,260
max. capacity	8 x 50 ml
run-up I run-down, braked in sec	28 I 31
angle I max. noise level	90° I 58 dB (A)
temperature in °C [1]	-8
Cat. No.	**1554**

+

Bucket	
Cat. No.	**1563**



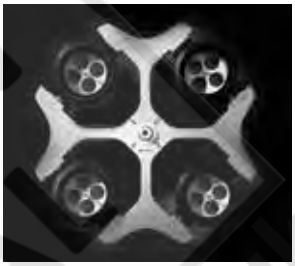
Vessels				
capacity in ml	12	15	50	50
Ø x L in mm	17 x 100	17 x 120	29 x 115	29 x 115
max. RCF [2]	3,260	3,260	3,260	3,260
radius in mm	144	144	144	144
Cat. No.	**tubes with screw cap**			

+

Adapter				
boring Ø x L in mm	17 x 87	17 x 87	30 x 87	30 x 87
vessels per rotor	8	8	8	8
Cat. No.	**1592**	**1592**	**-**	**-**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

SWING-OUT ROTOR, 4-PLACE | 1494



Rotor	
max. RPM I max. RCF	5,000 min^{-1} I 4,193
max. capacity	4 x 100 ml
run-up I run-down, braked in sec	30 I 32
angle I max. noise level	90° I 56 dB (A)
temperature in °C [1]	-10
Cat. No.	**1494**

Bucket	
Cat. No.	**1425**

Vessels													
capacity in ml	1.5	2.0	1	3	5	6	7	9	15	25	50	100	1–8
Ø x L in mm	11 x 38	11 x 38	6 x 45	10 x 60	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	24 x 100	34 x 100	44 x 100	simple / multiple
max. RCF [2]	3,885	3,885	3,969	3,913	3,913	3,913	3,913	3,913	3,913	3,913	3,913	3,801	2,739
radius in mm	139	139	142	140	140	140	140	140	140	140	140	136	98
Cat. No.	**microliter tubes**		**Rhesus**	**tubes [2]**									**cyto chambers**

Adapter													
boring Ø x L in mm	11.5 x 38	11.5 x 38	6.5 x 34	10.5 x 40	13.4 x 50	12.7 x 60	12.7 x 60	17.5 x 84	17.5 x 84	25.5 x 84	35.5 x 84	45.5 x 86	-
vessels per rotor	36	36	144	56	28	48	48	28	28	8	4	4	4
Cat. No.	**1444**	**1444**	**1432**	**1433**	**1438**	**1434**	**1434**	**1431**	**1431**	**1435**	**1436**	**1437**	**1452**

Vessels														
capacity in ml	2.6 – 3.4	2.7 – 3	4 – 5.5	4.5 – 5	4.9	7.5 – 8.5	9 – 10	1.6 – 5	4 – 7	4 – 7	8.5 – 10	15	50	50
Ø x L in mm	13 x 65	11 x 66	15 x 75	11 x 92	13 x 90	15 x 92	16 x 92	13 x 75	13 x 100	16 x 75	16 x 100	17 x 120	29 x 115	19 x 115
max. RCF [2]	3,913	3,913	3,913	3,913	3,913	3,913	3,913	3,913	3,913	3,913	3,913	4,081	4,081	4,081
radius in mm	140	140	140	140	140	140	140	140	140	140	140	146	146	146
Cat. No.	**blood collection / urine vessels**											**tubes with screw cap**		

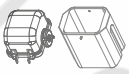
Adapter														
boring Ø x L in mm	13.4 x 50	13.4 x 50	16.5 x 50	13.4 x 50	13.4 x 50	16.5 x 50	17 x 45	13.4 x 50	13.4 x 50	16.5 x 50	16.5 x 50	17 x 90	30 x 90	30 x 90
vessels per rotor	28	28	28	28	28	28	16	28	28	28	28	4	4	4
Cat. No.	**1438**	**1438**	**1441**	**1438**	**1438**	**1441**	**1439**	**1438**	**1438**	**1441**	**1441**	**1442**	**1443**	**1737**

CYTO Cyto system available for this model.
More information on page 178

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

SWING-OUT ROTOR, 4-PLACE | 1494

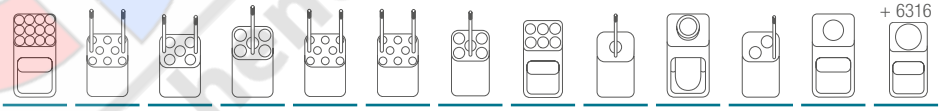
Rotor	
max. RPM I max. RCF	5,000 min^{-1} I 4,109
max. capacity	4 x 50 ml
run-up I run-down, braked in sec	30 I 32
angle I max. noise level	90° I 54 dB (A)
temperature in °C [1]	-10
Cat. No.	**1494**

Bucket	
Lid	1421
Cat. No.	**1427**

Vessels															
capacity in ml	1.5	2.0	1	3	5	6	7	9	15	25	50	1.1 – 1.4	2.6 – 3.4	2.7 – 3	4 – 5.5
Ø x L in mm	11 x 38	11 x 38	6 x 45	10 x 60	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	24 x 100	34 x 100	8 x 66	13 x 65	11 x 66	15 x 75
max. RCF [2]	4,109	4,109	4,081	4,053	4,025	4,053	3,941	3,941	3,941	3,941	3,941	4,109	4,025	4,053	4,109
radius in mm	147	147	146	145	144	145	141	141	141	141	141	147	144	145	147
Cat. No.	**microliter tubes**		**Rhesus**	**tubes [2]**								**blood collection / urine vessels**			

Adapter															
boring Ø x L in mm	11.5 x 38	11.5 x 38	6.5 x 34	10.5 x 40	13.4 x 58	12.5 x 44	12.4 x 87	15 x 73	17.8 x 87	25.5 x 87	35.5 x 87	9 x 41	13.4 x 58	12.5 x 44	15.6 x 41
vessels per rotor	36	36	120	48	32	48	48	24	24	8	4	48	32	48	20
Cat. No.	**5277**	**5277**	**1357**	**1327**	**1732**	**5229**	**5230**	**5237**	**5231**	**5232**	**5233**	**5278**	**1732**	**5229**	**5279**

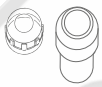
Vessels													
capacity in ml	4.5 – 5	4.9	7.5 – 8.5	9 – 10	1.6 – 5	4 – 7	4 – 7	8.5 – 10	15	50	25	30	50
Ø x L in mm	11 x 92	13 x 90	15 x 92	16 x 92	13 x 75	13 x 100	16 x 75	16 x 100	17 x 120	29 x 115	25 x 90	25 x 110	29 x 115
max. RCF [2]	3,941	4,025	4,105	3,969	4,025	4,025	3,969	3,941	4,165	4,053	3,565	4,025	4,053
radius in mm	141	144	147	142	144	144	142	141	145	145	142	144	145
Cat. No.	**blood collection / urine vessels**								**tubes with screw cap**				

Adapter													+ 6316
boring Ø x L in mm	12.4 x 87	13.4 x 58	15.6 x 41	17 x 66	13.4 x 58	13.4 x 58	17 x 66	17.8 x 87	17 x 90	30 x 90	25.5 x 72	25.5 x 85	35.5 x 87
vessels per rotor	48	32	20	20	32	32	20	24	4	4	8	4	4
Cat. No.	**5230**	**1732**	**5279**	**5271 [4]**	**1732**	**1732**	**5271 [4]**	**5231**	**5275**	**5276**	**1731**	**5272**	**5233 [4]**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3.1) When using these tubes, carrier 1427 cannot be closed with lid 1421.
4) Please remove the spacer.

SWING-OUT ROTOR, 4-PLACE | 1494

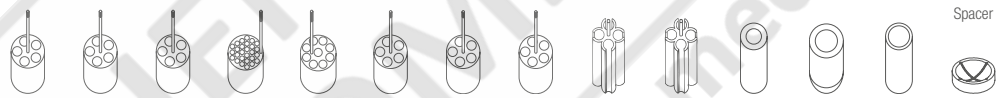
Rotor	
max. RPM I max. RCF	5.000 min^{-1} I 4.193
max. capacity	4 x 100 ml
run-up I run-down, braked in sec	30 I 32
angle I max. noise level	90° I 58 dB (A)
temperature in °C [1]	-10
Cat. No.	**1494**



Bucket	
Lid bioseal [5]	1492
Cat. No.	**1495**

UNIVERSAL
320 I 320 R

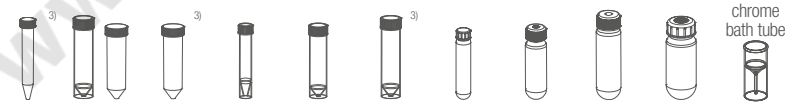
Vessels														
capacity in ml	0.5	1.5	2.0	1	3	5	6	7	9	15	25	50	94	100
Ø x L in mm	10.7 x 36	11 x 38	11 x 38	6 x 45	10 x 60	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	24 x 100	34 x 100	38 x 102	44 x 100
max. RCF [2]	3,745	3,857	3,857	4,081	4,137	4,025	4,025	4,025	3,997	3,997	3,829	3,801	4,109	4,025
radius in mm	134	138	138	146	148	144	144	144	143	143	137	136	147	144
Cat. No.	**Pediatric**	**microliter tubes**		**Rhesus**	**tubes [2]**									



Adapter														
boring Ø x L in mm	11.2 x 38	11.2 x 38	11.2 x 38	6.5 x 34	10.5 x 40	13.4 x 48	13.4 x 48	13.4 x 48	17.6 x 91	17.6 x 91	25.2 x 87	35.2 x 87	38.5 x 92	45.6 x 98
vessels per rotor	20	20	20	108	36	20	20	20	16	16	4	4	4	4
Cat. No.	**1351**	**1351**	**1351**	**1339**	**1343**	**1383**	**1383**	**1383**	**1329**	**1329**	**1330**	**1331**	**1396**	**0761**

Vessels												
capacity in ml	1.1 – 1.4	2.7 – 5	2.7 – 5	2.6 – 4.9	2.6 – 4.9	4 – 8.5	4 – 8.5	9 – 10	10	1.6 – 5	1.6 – 5	4 – 10	4 – 10
Ø x L in mm	8 x 66	11 x 66	11 x 92	13 x 65	13 x 90	15 x 75	15 x 92	16 x 92	15 x 102	13 x 75	13 x 100	16 x 75	16 x 100
max. RCF [2]	4,053	4,025	4,025	4,025	4,025	4,053	4,053	3,997	4,193	4,025	4,025	4,025	4,025
radius in mm	145	144	144	144	144	145	145	143	150	144	144	144	144
Cat. No.	**blood collection / urine vessels**												

Adapter													
boring Ø x L in mm	9 x 47	13.4 x 48	13.4 x 48	13.4 x 48	13.4 x 48	15.6 x 47	15.6 x 47	17.6 x 91	17.6 x 91	13.4 x 48	13.4 x 48	16.5 x 56	16.5 x 56
vessels per rotor	28	20	20	20	20	16	16	16	16	20	20	16	16
Cat. No.	**1457**	**1383**	**1383**	**1383**	**1383**	**1459**	**1459**	**1329**	**1329 [4]**	**1383**	**1383**	**1348**	**1348**

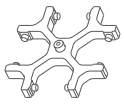


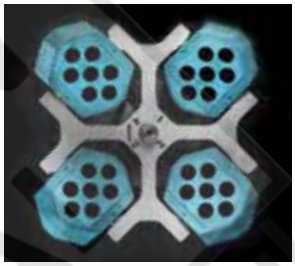
Vessels											
capacity in ml	15	30	50	12	25	50	10	30	50	85	30
Ø x L in mm	17 x 120	25 x 110	29 x 115	17 x 100	25 x 90	29 x 115	16 x 80	26 x 95	29 x 107	38 x 106	44 x 105
max. RCF [2]	4,193	4,193	4,193	4,193	3,689	4,193	4,025	3,857	4,137	4,109	3,997
radius in mm	150	150	150	150	132	150	144	138	148	147	143
Cat. No.	**tubes with screw cap**										**0534 [6]**

Adapter											
boring Ø x L in mm	17 x 90	26 x 80	30 x 90	17 x 80	26 x 72	29.5 x 80	16.5 x 56	26 x 83	29 x 93	38.5 x 92	45.9 x 98
vessels per rotor	4	4	4	4	4	4	16	4	4	4	4
Cat. No.	**1347**	**1365**	**1384**	**6311**	**1363**	**6318**	**1348**	**4417**	**4416**	**1396**	**0765**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3) When using these tubes, bucket 1495 cannot be closed with lid 1492.
4) Please remove the spacer.
5) Tested by the TÜV in conformity with DIN EN 61010. section 2 - 020.
6) A rubber stopper for closing the tube for agitating or mixing is available under Cat. No. 0535. The tube may not be centrifuged with the stopper.

SWING-OUT ROTOR, 4-PLACE | 1624





Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,665
max. capacity	4 x 50 ml
run-up I run-down, braked in sec	20 I 25
angle	90°
Cat. No.	**1624**

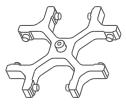
Vessels													
capacity in ml	5	5	6	7	9	9	15	15	20	25	45	50	1–8
Ø x L in mm	12 x 75	12 x 75	12 x 82	12 x 100	14 x 100	14 x 100	17 x 100	17 x 100	21 x 100	24 x 100	31 x 100	34 x 100	simple / multiple
max. RCF [2]	2,057	2,164	2,308	2,308	2,308	2,415	2,308	2,415	2,361	2,451	2,361	2.451	1,646
radius in mm	115	121	129	129	129	135	129	137	132	137	132	137	92
temperature in °C [1]	-17	-17	-17	-17	-17	-15	-17	-15	-15	-15	-15	-15	-16
Cat. No.	**tubes [2]**												**cyto chambers**
Carrier	with decanting aid		with decanting aid	with decanting aid		+ 0701							
boring Ø x L in mm	12.5x64.4	13.5 x 65	12.5x71.5	12.5x71.5	14.6 x 74	14.6 x 78	17.6x71.5	17.6 x 78	21.5 x 74	26 x 78	32 x 74	35 x 78	-
vessels per rotor	16	68	16	16	20	40	16	28	8	8	4	4	4
Cat. No.	**1369-91**	**1372**	**1369-92**	**1369-92**	**1370**	**1741**	**1369**	**1742**	**1346**	**1745**	**1345**	**1746**	**1660**

Vessels													
capacity in ml	1.1 – 1.4	2.6 – 3.4	4.5 – 5	4.9	1.6 – 5	4 – 7	1.6 – 5	4 – 7	4 – 7	4 – 7	4 – 7	8.5 – 10	30
Ø x L in mm	8 x 66	13 x 65	15 x 75	13 x 90	13 x 75	16 x 75	13 x 75	16 x 75	13 x 100	13 x 100	13 x 100	16 x 100	26 x 95
max. RCF [2]	2,415	2,325	2,325	2,451	2,129	2,361	2,325	2,325	2,361	2,361	2,451	2,361	2,451
radius in mm	135	130	130	137	119	132	130	130	132	132	137	132	137
temperature in °C [1]	-15	-15	-15	-15	-15	-15	-15	-15	-15	-15	-15	-17	-15
Cat. No.	**blood collection / urine vessels**												**0545**
Carrier	+ 0701	+ 0716	+ 0716		+ 0768 [16]		+ 0716	+ 0716	+ 1058				
boring Ø x L in mm	14.6 x 78	17.6 x 78	17.6 x 78	14.6 x 78	14.6 x 78	17.6x71.5	17.6 x 78	17.6 x 78	17.6x71.5	14.6 x 74	13.5 x 78	17.6x71.5	26 x 78
vessels per rotor	40	28	28	40	40	16	28	28	16	20	28	16	8
Cat. No.	**1741**	**1742**	**1742**	**1741**	**1741**	**1369 [4]**	**1742**	**1742**	**1369 [4]**	**1370 [4]**	**1739**	**1369 [4]**	**1745**

CYTO For more information about our Cyto accessory, see page 178

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
4) Please remove spacer.
5) Tested by the TÜV in conformity with DIN EN 61010. section 2 - 020.
16) Packed in units of 10 pieces.
20) This combination permits no Vacutainers made of glass.

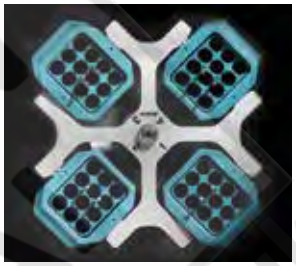
SWING-OUT ROTOR, 4-PLACE | 1624

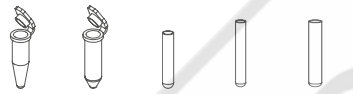


Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 1,968
max. capacity	48 x 4 ml
run-up I run-down, braked in sec	22 I 25
angle I max. noise level	90° I 48 dB (A)
temperature in °C	-15
Cat. No.	**1624**

+

Bucket	
Cat. No.	**1366**





Vessels					
capacity in ml	1.5	2.0	1	3	4
Ø x L in mm	11 x 38	11 x 38	6 x 45	10 x 60	12 x 60
max. RCF [2]	1,968	1,968	1,950	1,932	1,932
radius in mm	110	110	109	108	108
Cat. No.	**microliter tubes**		**Rhesus**	**tubes [2]**	

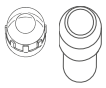
+

Adapter					
boring Ø x L in mm	11.5 x 38	11.5 x 38	6.5 x 23	10.5 x 23	12.5 x 44
vessels per rotor	36	36	120	48	48
Cat. No.	**5277**	**5277**	**1357**	**1327**	**1326**

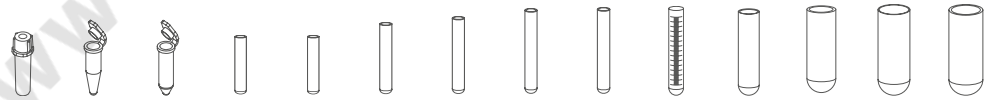
SWING-OUT ROTOR, 4-PLACE | 1624

Rotor	
max. RPM I max. RCF [2]	4,000 min^{-1} I 2,665
max. capacity	4 x 100 ml
run-up I run-down, braked in sec	20 I 25
angle I max. noise level	90° I 58 dB (A)
temperature in °C	-15
Cat. No.	**1624**

+

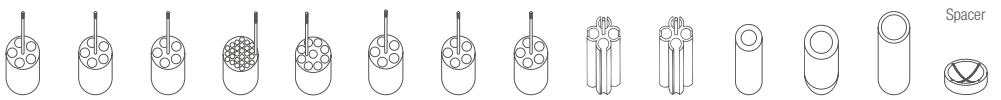


Bucket	
Lid bioseal [5]	1492
Cat. No.	**1481**



Vessels														
capacity in ml	0.5	1.5	2.0	1	3	5	6	7	9	15	25	50	94	100
Ø x L in mm	10.7 x 36	11 x 38	11 x 38	6 x 45	10 x 60	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	24 x 100	34 x 100	38 x 102	44 x 100
max. RCF [2]	2,379	2,451	2,451	2,594	2,630	2,558	2,558	2,558	2,540	2,540	2,433	2,415	2,612	2,558
radius in mm	133	137	137	145	147	143	143	143	142	142	136	135	146	143
Cat. No.	**Pediatric**	**microliter tubes**		**Rhesus**	**tubes [2]**									

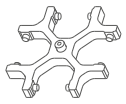
+



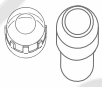
Adapter														
boring Ø x L in mm	11.2 x 38	11.2 x 38	11.2 x 38	6.5 x 34	10.5 x 43	13.4 x 48	13.4 x 48	13.4 x 48	17.6 x 91	17.6 x 91	25.2 x 87	35.2 x 87	38.5 x 92	45.9 x 98
vessels per rotor	20	20	20	108	36	20	20	20	16	16	4	4	4	4
Cat. No.	**1351**	**1351**	**1351**	**1339**	**1343**	**1383**	**1383**	**1383**	**1329**	**1329**	**1330**	**1331**	**1396**	**0761**

Spacer

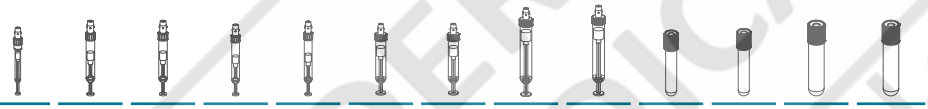
SWING-OUT ROTOR, 4-PLACE | 1624



Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,665
max. capacity	4 x 100 ml
run-up I run-down, braked in sec	20 I 25
angle I max. noise level	90° I 58 dB (A)
temperature in °C	-15
Cat. No.	**1624**

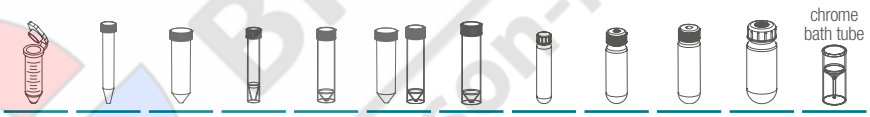


Bucket	
Lid bioseal [5]	1492
Cat. No.	**1481**



Vessels													
capacity in ml	1.1–1.4	2.7–5	2.7–5	2.6–4.9	2.6–4.9	4–8.5	4–8.5	9–10	10	1.6 – 7	1.6 – 7	4 – 10	4 – 10
Ø x L in mm	8 x 66	11 x 66	11 x 92	13 x 65	13 x 90	15 x 75	15 x 92	16 x 92	15 x 102	13 x 75	13 x 100	16 x 75	16 x 100
max. RCF [2]	2,576	2,558	2,558	2,558	2,558	2,576	2,576	2,540	2,665	2,558	2,558	2,522	2,522
radius in mm	144	143	143	143	143	144	144	142	149	143	143	141	141
Cat. No.	**blood collection / urine vessels**												

Adapter													
boring Ø x L in mm	9 x 47	13.4 x 48	13.4 x 48	13.4 x 48	13.4 x 48	15.6 x 47	15.6 x 47	17.6 x 91	17.6 x 91	13.4 x 48	13.4 x 48	16.5 x 56	16.5 x 56
vessels per rotor	28	20	20	20	20	16	16	16	16	20	20	16	16
Cat. No.	**1457**	**1383**	**1383**	**1383**	**1383**	**1459**	**1459**	**1329**	**1329 [4]**	**1383**	**1383**	**1348**	**1348**



Vessels												
capacity in ml	5	15	50	12	25	30	50	10	30	50	85	30
Ø x L in mm	17 x 59	17 x 120	29 x 115	17 x 100	25 x 90	25 x 110	29 x 115	16 x 80	26 x 95	29 x 107	38 x 106	44 x 105
max. RCF [2]	2,665	2,665	2,665	2,665	2,343	2,665	2,665	2,522	2,451	2,630	2,612	2,540
radius in mm	149	149	149	149	131	149	149	141	137	147	146	142
Cat. No.	**-**	**tubes with screw cap**										**0534 [6]**

Adapter												
boring Ø x L in mm	17 x 45	17 x 90	30 x 90	17 x 80	26 x 72	26 x 80	29.5 x 80	16.5 x 56	26 x 83	29 x 93	38.5 x 92	45.9 x 98
vessels per rotor	12	4	4	4	4	4	4	16	4	4	4	4
Cat. No.	**6341**	**1347**	**1384**	**6311**	**1363**	**1365**	**6318**	**1348**	**4417**	**4416**	**1396**	**0765**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3.3) When using these tubes, bucket 1752 or 5051 cannot be closed with lid 1751 or 5053.
4) Please remove the spacer.
5) Tested by the TÜV in conformity with DIN EN 61010. section 2 - 020.
6) A rubber stopper for closing the tube for agitating or mixing is available under Cat. No. 0535. The tube may not be centrifuged with the stopper.

SWING-OUT ROTOR, 4-PLACE | 1324

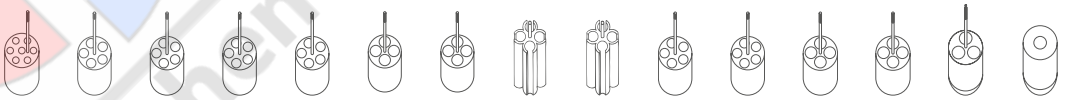
Rotor	
max. RPM I max. RCF	4,500 min^{-1} I 3,328
max. capacity	4 x 100 ml
run-up I run-down, braked in sec	27 I 30
angle I max. noise level	90° I 58 dB (A)
temperature in °C	-6
Cat. No.	**1324**

Bucket	
Lid bioseal [5]	1492
Cat. No.	**1490**

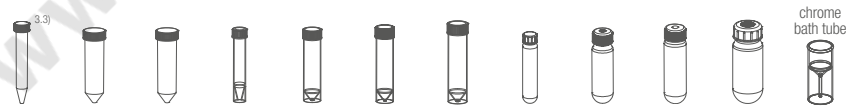
Vessels															
capacity in ml	0.5	1.5	2.0	1	3	4	5	6	7	9	15	25	50	94	100
Ø x L in mm	10.7 x 36	11 x 38	11 x 38	6 x 45	10 x 60	10 x 88	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	24 x 100	34 x 100	38 x 102	44 x 100
max. RCF [2]	2,966	3,056	3,056	3,237	3,283	3,283	3,192	3,192	3,192	3,170	3,170	3,034	3,011	3,260	3,192
radius in mm	131	135	135	143	145	145	141	141	141	140	140	134	133	144	141
Cat. No.	**Pediatric**	**microliter tubes**		**Rhesus**	**tubes [2]**										

Adapter															
boring Ø x L in mm	11.2 x 38	11.2 x 38	11.2 x 38	6.5 x 34	10.5 x 43	10.5 x 43	13.4 x 48	13.4 x 48	13.4 x 48	17.6 x 91	17.6 x 91	25.2 x 87	35.2 x 87	38.5 x 92	45.9 x 100.5
vessels per rotor	20	20	20	108	36	36	20	20	20	16	16	4	4	4	4
Cat. No.	**1351**	**1351**	**1351**	**1339**	**1343**	**1343**	**1383**	**1383**	**1383**	**1329**	**1329**	**1330**	**1331**	**1396**	**0761**

Vessels															
capacity in ml	1.1 – 1.4	2.6 – 3.4	4.9	2.7 – 3	4.5 – 5	4 – 5.5	7.5 – 8.5	9 – 10	10	1.6 – 5	4 – 7	4 – 7	8.5 – 10	5	15
Ø x L in mm	8 x 66	13 x 65	13 x 90	11 x 66	11 x 92	15 x 75	15 x 92	16 x 92	15 x 102	13 x 75	13 x 100	16 x 75	16 x 100	17 x 59	17 x 120
max. RCF [2]	3,215	3,192	3,192	3,192	3,192	3,215	3,215	3,170	3,328	3,192	3,192	3,147	3,147	3,328	3,328
radius in mm	142	141	141	141	141	142	142	140	147	141	141	139	139	147	147
Cat. No.	**blood collection / urine vessels**													**-**	**-**



Adapter															
boring Ø x L in mm	9 x 47	13.4 x 48	13.4 x 48	13.4 x 48	13.4 x 48	15.6 x 47	15.6 x 47	17.6 x 91	17.6 x 91	13.4 x 48	13.4 x 48	16.5 x 56	16.5 x 56	17 x 45	17 x 90
vessels per rotor	28	20	20	20	20	16	16	16	16	20	20	16	16	12	4
Cat. No.	**1457**	**1383**	**1383**	**1383**	**1383**	**1459**	**1459**	**1329**	**1329 [4]**	**1383**	**1383**	**1348**	**1348**	**6341**	**1347**



Vessels												
Kapazität in ml	15	30	50	12	25	30	50	10	30	50	85	30
Ø x L in mm	17 x 120	25 x 110	29 x 115	17 x 100	25 x 90	25 x 110	29 x 115	16 x 80	26 x 95	29 x 107	38 x 106	44 x 105
max. RCF [2]	3,328	3,328	3,328	3,328	2,920	3,328	3,328	3,147	3,056	3,283	3,260	3,170
radius in mm	147	147	147	147	129	147	147	139	135	145	144	140
Cat. No.	**tubes with screw cap**											**- [6]**

Adapter												
boring Ø x L in mm	17 x 107	26 x 80	30 x 90	17 x 80	26 x 72	26 x 80	29.5 x 80	16.5 x 56	26 x 83	29 x 93	38.5 x 92	45.9 x 100.5
vessels per rotor	12	4	4	4	4	4	4	16	4	4	4	4
Cat. No.	**1356**	**1365**	**1384**	**6311**	**1363**	**1365**	**6318**	**1348**	**4417**	**4416**	**1396**	**0765**

SWING-OUT ROTOR, 4-PLACE | 1324

Rotor	
max. RPM I max. RCF	4,500 min^{-1} I 3,305
max. capacity	4 x 50 ml
run-up I run-down, braked in sec	27 I 30
angle I max. noise level	90° I 54 dB (A)
temperature in °C	-6
Cat. No.	**1324**

+

Bucket	
Cat. No.	**1398**

Vessels															
capacity in ml	5	6	7	9	12	15	2.6–3.4	2.7–3	4–5.5	4.5–5	4.9	9 – 10	10	1.6 – 5	4 – 7
Ø x L in mm	12 x 75	12 x 82	12 x 100	14 x 100	17 x 102	17 x 100	13 x 65	11 x 66	15 x 75	11 x 92	13 x 90	16 x 92	15 x 102	13 x 75	13 x 100
max. RCF [2]	3,147	3,147	3,147	3,192	3,102	3,192	3,147	3,147	2,875	3,147	3,147	3,192	3,192	3,147	3,147
radius in mm	139	139	139	141	137	141	139	139	127	139	139	141	141	139	139
Cat. No.	**Tubes [2]**						**blood collection / urine vessels**								

+

Adapter									+ 0716						
boring Ø x L in mm	13.4x57.5	13.4x57.5	13.4x57.5	17.5 x 81	17.5 x 74	17.5 x 81	13.4x57.5	13.4x57.5	17.5 x 81	13.4x57.5	13.4x57.5	17.5 x 81	17.5 x 81	13.4x57.5	13.4x57.5
vessels per rotor	20	20	20	16	12	16	20	20	16	20	20	16	16	20	20
Cat. No.	**1486**	**1486**	**1486**	**1482A**	**1487**	**1482A**	**1486**	**1486**	**1482A**	**1486**	**1486**	**1482A**	**1482A**	**1486**	**1486**

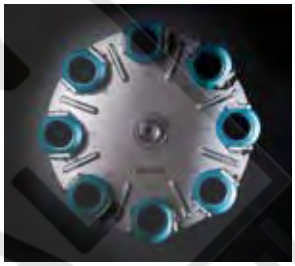
Vessels						
capacity in ml	4 – 7	8.5 – 10	15	50	12	50
Ø x L in mm	16 x 75	16 x 100	17 x 120	29 x 115	17 x 100	29 x 115
max. RCF [2]	3,034	3,034	3,305	3,260	3,192	3,260
radius in mm	134	134	146	144	141	144
Cat. No.	**blood collection / urine vessels**		**tubes with screw cap**			

+

Adapter	+ 0716	+ 0716				
boring Ø x L in mm	17.5 x 81	17.5 x 81	17 x 100	30 x 98	17.5 x 81	30 x 98
vessels per rotor	16	16	16	4	16	4
Cat. No.	**1482A**	**1482A**	**1483A**	**1484**	**1482A**	**1484 [4]**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
4) Please remove spacer.

SWING-OUT ROTOR, 8-PLACE | 1611



Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,415
max. capacity	8 x 15 ml
run-up I run-down, braked in sec	20 I 20
angle I max. noise level	90° I 48 dB (A)
temperature in °C [1]	-16
Cat. No.	**1611**

Vessels														
capacity in ml	5	6	7	10	15	2.6 – 3.4	2.7 – 3	4 – 5.5	4.5 – 5	7.5 – 8.5	1.6 – 5	4 – 7	4 – 7	8.5 – 10
Ø x L in mm	12 x 75	12 x 82	12 x 100	13 x 100	17 x 100	13 x 65	11 x 66	15 x 75	11 x 92	15 x 92	13 x 75	13 x 100	16 x 75	16 x 100
max. RCF [2]	1,914	1,914	2,415	2,415	2,415	1,914	1,914	1,914	2,415	2,415	1,914	2,415	1,914	2,415
radius in mm	107	107	135	135	135	107	107	107	135	135	107	135	107	135
Cat. No.	**tubes [2]**					**blood collection / urine vessels**								

+ Bucket														
boring Ø x L in mm	13 x 53	13 x 53	13.2 x 81	13.2 x 81	17.5 x 81	13 x 53	13 x 53	17.5 x 53	13.2 x 81	17.5 x 81	13 x 53	13.2 x 81	17.5 x 53	17.5 x 81
vessels per rotor	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Cat. No.	**1131-A**	**1131-A**	**1643**	**1643**	**1644**	**1131-A**	**1131-A**	**1132-A**	**1643**	**1644**	**1131-A**	**1643**	**1132-A**	**1644**

SWING-OUT ROTOR, 12-PLACE | 1628

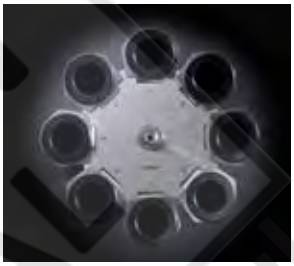
Rotor	
max. RPM I max. RCF [2]	5,000 min^{-1} I 4,193
max. capacity	12 x 15 ml
run-up I run-down, braked in sec	16 I 16
angle I max. noise level	55°/ 60°/ 80° I 54 dB (A)
Cat. No.	**1628**

Vessels									
capacity in ml	5	15	2.6 – 3.4	2.7 – 3	4 – 5.5	7.5 – 8.5	1.6 – 5	4 – 7	8.5 – 10
Ø x L in mm	12x75	17x100	13x65	11x66	15x75	15x92	13x75	16x75	16x100
max. RCF [2]	3,494	4,193	3,494	3,494	3,522	4,193	3,494	3,522	4,193
radius in mm	125	150	125	125	126	150	125	126	150
temperature in °C [1]	-15	-10	-15	-15	-15	-10	-15	-15	-10
Cat. No.	**tubes [2]**		**blood collection / urine vessels**						

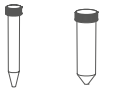
+ Bucket									
boring Ø x L in mm	13.2x53	17.5x79	13.2x53	13.2x53	17.5x53	17.5x79	13.2x53	17.5x53	17.5x79
vessels per rotor	12	12	12	12	12	12	12	12	12
Cat. No.	**1127-A**	**1621**	**1127-A**	**1127-A**	**1122**	**1621**	**1127-A**	**1122**	**1621**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

SWING-OUT ROTOR, 8-PLACE | 1617



Rotor	
max. RPM I max. RCF	5,000 min^{-1} I 3,857
max. capacity	8 x 50 ml
run-up I run-down, braked in sec	20 I 19
angle I max. noise level	45° I 50 dB (A)
temperature in °C [1]	-10
Cat. No.	**1617**



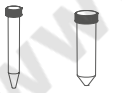
Vessels		
capacity in ml	15	50
Ø x L in mm	17 x 120	29 x 115
max. RCF [2]	3,857	3,857
radius in mm	138	138
Cat. No.	**tubes with screw cap**	

+

Adapter		
boring Ø x L in mm	17 x 84	30 x 94.5
vessels per rotor	8	8
Cat. No.	**1462-A**	**-**

SWING-OUT ROTOR, 6-PLACE | 1619

Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,701
max. capacity	6 x 50 ml
run-up I run-down, braked in sec	20 I 22
angle I max. noise level	90° I 50 dB (A)
temperature in °C [1]	-15
Cat. No.	**1619**



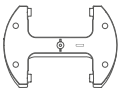
Vessels		
capacity in ml	15	50
Ø x L in mm	17 x 120	29 x 115
max. RCF [2]	2,701	2,701
radius in mm	151	151
Cat. No.	**tubes with screw cap**	

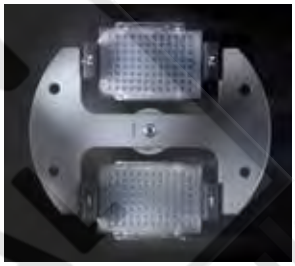
+

Adapter		
boring Ø x L in mm	17 x 84	30 x 87.5
vessels per rotor	6	6
Cat. No.	**1462-A**	**-**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

SWING-OUT ROTOR, 2-PLACE | 1460





Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,218
max. capacity	10 plates
run-up I run-down, braked in sec	40 I 45
angle I max. noise level	90° I 55 dB (A)
temperature in °C [1]	-6
Cat. No.	**1460**

Vessels									
capacity in ml	-	-	-	-	-	-	-	-	0.2
W x D x H in mm	128x86x15	128x86x17.5	128 x 86 x 22	128 x 86 x 44.5	128 x 86 x 46	128 x 86 x 83	84 x 59 x 11	124 x 82 x 20	-
max. RCF [2]	2,218	2,218	2,218	2,218	2,218	2,218	2,218	2,218	2,218
radius in mm	124	124	124	124	124	124	124	124	124
Cat. No.	**MTP**	**MTP**	**CP**	**DWP**	**MS**	**QP**	**Microtest plates**	**PCR plate, 96 wells**	**PCR strips**

+

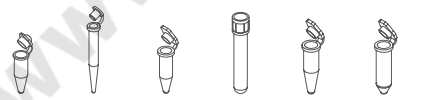
Bucket									
boring Ø x L in mm	-	-	-	-	-	-	-	-	-
vessels per rotor	10	8	6	2	2	2	4	2	24 x 8
Cat. No.	**1453-A**	**1453-A**	**1453-A**	**1453-A**	**1453-A**	**1453-A**	**1453-A**	**1453-A + 1485**	**1453-A + 1485**

SWING-OUT ROTOR, 24-PLACE | 1555

Rotor	
max. RPM I max. RCF	13,000 min^{-1} I 18,327
max. capacity	24 x 2 ml
run-up I run-down, braked in sec	36 I 31
angle	90°
temperature in °C [1]	3
Cat. No.	**1555**

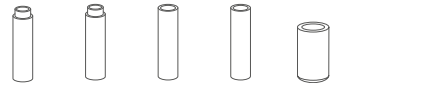
+

Lid bioseal[5], phenol-resistant	
Cat. No.	**INCLUSIVE**



Vessels						
capacity in ml	0.2	0.4	0.5	0.8	1.5	2
Ø x L in mm	6x18	6x45	8x30	8x45	11x38	11x38
max. RCF [2]	18,327	18,327	18,327	18,327	18,327	18,327
radius in mm	97	97	97	97	97	97
Cat. No.	**microliter tubes**					

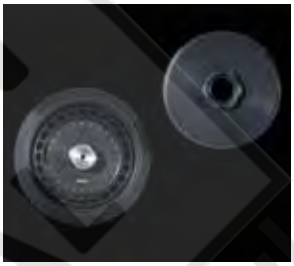
+



Adapter						
boring Ø x L in mm	6x40	6x40	8x40	8x40	10.2x19.3	11.5x38.5
vessels per rotor	24	24	24	24	24	24
Cat. No.	**2024**	**2024**	**2023**	**2023**	**2031[7]**	**-**

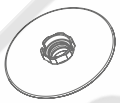
1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
5) Tested by TÜV in conformity with DIN EN 61010, section 2 - 020.
7) For centrifugation at high speeds, we recommend to use conical, phenol-resistant adapters. Cat. No. 2031.

ANGLE ROTOR, 24-PLACE | 1552



Rotor	
max. RPM I max. RCF	16,000 min^{-1} I 24,900
max. capacity	24 x 2 ml
run-up I run-down, braked in sec	30 I 29
angle I max. noise level	50° I 58 dB (A)
temperature in °C [1]	2
Cat. No.	**1552**

+



Lid bioseal[5], phenol-resistant	
Cat. No.	**INCLUSIVE**

Vessels							
capacity in ml	0.2	0.4	0.5	0.8	1.5	2	0.5
Ø x L in mm	6 x 18	6 x 45	8 x 30	8 x 45	11 x 38	11 x 38	10,7 x 36
max. RCF [2]	24,900	24,900	24,900	24,900	24,900	24,900	23,755
radius in mm	87	87	87	87	87	87	83
Cat. No.	**microliter tubes**						**Pediatric**

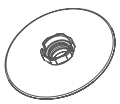
+

Adapter							
boring Ø x L in mm	6 x 40	6 x 40	8 x 40	8 x 40	10.2x19.3	11.2x42.6	11.2 x 39
vessels per rotor	24	24	24	24	24	24	12
Cat. No.	**2024**	**2024**	**2023**	**2023**	**2031[7]**	**-**	**0788[17]**

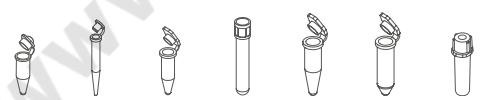
ANGLE ROTOR, 30-PLACE | 1553

Rotor	
max. RPM I max. RCF	14,150 min^{-1} I 21,713
max. capacity	30 x 2 ml
run-up I run-down, braked in sec	35 I 32
angle	45°
temperature in °C [1]	-1
Cat. No.	**1553**

+



Lid bioseal[5], phenol-resistant	
Cat. No.	**INCLUSIVE**



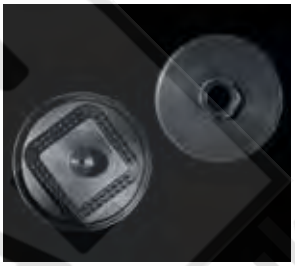
Vessels							
capacity in ml	0.2	0.4	0.5	0.8	1.5	2	0.5
Ø x L in mm	6 x 18	6 x 45	8 x 30	8 x 45	11 x 38	11 x 38	10.7 x 36
max. RCF [2]	21,713	21,713	21,713	21,713	21,713	21,713	20,818
radius in mm	97	97	97	97	97	97	93
Cat. No.	**microliter tubes**						**Pediatric**

+

Adapter							
boring Ø x L in mm	6 x 40	6 x 40	8 x 40	8 x 40	10.2x19.3	11.2x40.9	11.2 x 39
vessels per rotor	30	30	30	30	30	30	15
Cat. No.	**2024**	**2024**	**2023**	**2023**	**2031[7]**	**-**	**0788[17]**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
5) Tested by TÜV in conformity with DIN EN 61010, section 2 - 020.
7) For centrifugation at high speeds, we recommend to use conical, phenol-resistant adapters. Cat. No. 2031.
17) Packed in units of 15 pieces.

ANGLE ROTOR, 8-PLACE | 1551



Rotor	
max. RPM	max. RCF	13,000 min^{-1}	13,604
max. capacity	8 x PCR-Strips
run-up	run-down, braked in sec	36	31
angle	max. noise level	45°	58 dB (A)
temperature in °C [1]	-4
Cat. No.	**1551**

+ **Lid bioseal[5], phenol-resistant**

Cat. No.	**INCLUSIVE**

Vessels		
capacity in ml	0.2	0.2
Ø x L in mm	6 x 18	-
max. RCF [2]	13,604	13,604
radius in mm	72	72
Cat. No.	**-**	**PCR-Strips**

ANGLE ROTOR, 18-PLACE | 1627

Rotor	
max. RPM	max. RCF	14,150 min^{-1}	22,161
max. capacity	18 x 5 ml
run-up	run-down, braked in sec	35	32
angle	45°
temperature in °C [1]	2
Cat. No.	**1627**

+ **Lid bioseal[5], phenol-resistant**

Cat. No.	**INCLUSIVE**

Vessels	
capacity in ml	5
Ø x L in mm	17 x 59
max. RCF [2]	22,161
radius in mm	99
Cat. No.	**-**

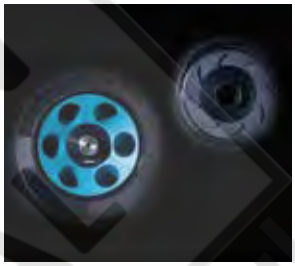
1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
5) Tested by TÜV in conformity with DIN EN 61010, section 2 - 020.

ANGLE ROTOR, 6-PLACE | 1556

Rotor	
max. RPM I max. RCF	9.000 min^{-1} I 10.595
max. capacity	6 x 94 ml
run-up I run-down, braked in sec	36 I 32
angle I max. noise level	35° I 60 dB (A)
temperature in °C [1]	0
Cat. No.	**1556**

+

Lid bioseal[5], phenol-resistant	
Cat. No.	**INCLUSIVE**



Vessels															
capacity in ml	1.5	2	15	50	50	85	7.5–8.5	9–10	10	8.5–10	15	50	10	30	50
Ø x L in mm	11 x 38	11 x 38	17 x 100	35 x 105	34 x 100	38 x 101	15 x 92	16 x 92	15 x 102	16 x 100	17 x 120	29 x 115	16 x 80	26 x 95	29 x 107
max. RCF [2]	10,324	10,324	10,052	10,414	10,414	10,595	10,052	10,052	10,052	10,052	10,052	10,052	10,414	9,690	10,142
radius in mm	114	114	111	115	115	117	111	111	111	111	111	111	115	107	112
Cat. No.	**microliter tubes**		**tubes [2]**				**blood collection / urine vessels**				**tubes with screw cap**				

+

Adapter															
boring Ø x L in mm	11.4 x 39	11.4 x 39	17.5 x 78	35 x 89	35 x 89	-	17.5 x 78	17.5 x 78	17.5 x 78	17.5 x 78	17 x 106	29.8 x 97	16.5 x 72	26 x 85	29 x 92
vessels per rotor	24	24	6	6	6	6	6	6	6	6	6	6	12	6	6
Cat. No.	**1449**	**1449**	**1478**	**1463**	**1463**	**-**	**1478**	**1478**	**1478**	**1478**	**1466**	**1454**	**1477**	**1447**	**1446**

Vessels		
capacity in ml	85	94
Ø x L in mm	38 x 106	38 x 102
max. RCF [2]	10,595	10,595
radius in mm	117	117
Cat. No.	**tubes with screw cap**	

+

Adapter		
boring Ø x L in mm	-	-
vessels per rotor	6	6
Cat. No.	**-**	**-**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
5) Tested by TÜV in conformity with DIN EN 61010, section 2 - 020.

ANGLE ROTOR, 12-PLACE | 1613

Rotor	
max. RPM I max. RCF	6,000 min^{-1} I 4,146
max. capacity	12 x 15 ml
run-up I run-down, braked in sec	15 I 15
angle I max. noise level	35° I 50 dB (A)
temperature in °C [1]	-16
Cat. No.	**1613**

Vessels															
capacity in ml	0.5	1.5	2.0	4	5	6	15	1.1 – 1.4	2.6 – 3.4	2.7 – 3	4.5 – 5	4.9	7.5 – 8.5	9 – 10	10
Ø x L in mm	10.7 x 36	11 x 38	11 x 38	10 x 88	12 x 75	12 x 82	17 x 100	8 x 66	13 x 65	11 x 66	11 x 92	13 x 90	15x92	16x92	15x102
max. RCF [2]	2,777	2,737	2,737	3,502	3,300	3,300	4,146	3,300	3,300	3,300	4,146	4,146	4,146	4,146	4,146
radius in mm	69	68	68	87	82	82	103	82	82	82	103	103	103	103	103
Cat. No.	**Pediatric**	**microliter tubes**		**tubes [2]**				**blood collection / urine vessels**							

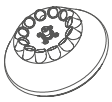
Adapter															
boring Ø x L in mm	11 x 35	11 x 35	11 x 35	11.5x67.5	13.5 x 60	13.5 x 60	17.7 x 88	13.5 x 60	13.5 x 60	13.5 x 60	17.7 x 88	17.7 x 88	17.7 x 88	17.7 x 88	17.7 x 88
vessels per rotor	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Cat. No.	**2 x 1063-6 (6 pcs.)**			**6305**	**1054-A**	**1054-A**	**-**	**1054-A**	**1054-A**	**1054-A**	**-**	**-**	**-**	**-**	

Vessels						
capacity in ml	1.6 – 5	4 – 7	8	8.5 – 10	5	15
Ø x L in mm	13 x 75	13 x 100	16 x 125	16 x 100	17 x 59	17 x 120
max. RCF [2]	3,300	4,146	4,146	4,146	3,180	4,146
radius in mm	82	103	103	103	79	103
Cat. No.	**blood collection / urine vessels**				**-**	**-**

Adapter						
boring Ø x L in mm	13.5 x 60	13.5 x 79	17.7 x 88	17.7 x 88	17 x 25	17.7 x 88
vessels per rotor	12	12	6	12	12	6
Cat. No.	**1054-A**	**1058**	**-**	**-**	**1064**	**-**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

ANGLE ROTOR, 12-PLACE | 1615



Rotor	
max. RPM I max. RCF	12,000 min^{-1} I 16,582
max. capacity	12 x 15 ml
run-up I run-down, braked in sec	40 I 40
angle I max. noise level	35° I 52 dB (A)
temperature in °C [1]	-2
Cat. No.	**1615**

Vessels														
capacity in ml	0.5	1.5	2.0	4	5	6	15	1.1 - 1.4	2.6 - 3.4	2.7 - 3	4.5 - 5	4.9	7.5 - 10	10
Ø x L in mm	10.7 x 36	11 x 38	11 x 38	10 x 88	12 x 75	12 x 82	17 x 100	8 x 66	13 x 65	11 x 66	11 x 92	13 x 90	15/16 x 92	15 x 102
max. RCF [2]	11,108	10,947	10,947	14,006	13,201	13,201	16,582	13,201	13,201	13,201	16,582	16,582	16,582	16,582
radius in mm	69	68	68	87	82	82	103	82	82	82	103	103	103	103
Cat. No.	**Pediatric**	**microliter tubes**		**tubes [2]**				**blood collection / urine vessels**						

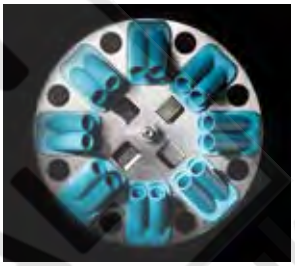
Adapter														
boring Ø x L in mm	11 x 35	11 x 35	11 x 35	11.5x67.5	13.5 x 60	13.5 x 60	17.7 x 88	13.5 x 60	13.5 x 60	13.5 x 60	17.7 x 88	17.7 x 88	17.7 x 88	17.7 x 88
vessels per rotor	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Cat. No.	**2 x 1063-6 (6 pcs.)**			**6305**	**1054-A**	**1054-A**	**-**	**1054-A**	**1054-A**	**1054-A**	**-**	**-**	**-**	**-**

Vessels						
capacity in ml	1.6 – 5	4 – 7	8 – 10	8 – 10	5	15
Ø x L in mm	13 x 75	13 x 100	16 x 100	16 x 125	17 x 59	17 x 120
max. RCF [2]	13,201	16,582	16,582	16,582	12,718	15,455
radius in mm	82	103	103	103	79	96
Cat. No.	**blood collection / urine vessels**				**-**	**-**

Adapter						
boring Ø x L in mm	13.5 x 60	13.5 x 79	17.7 x 88	17.7 x 88	17 x 25	17 x 104
vessels per rotor	12	12	12	6	12	6
Cat. No.	**1054-A**	**1058**	**-**	**-**	**1064**	**1647 [25]**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
25) Adapter (set), 6-place: For conical 15 ml tubes with screw cap, remove carriers from rotor and replace them with adapters.

ANGLE ROTOR, 8-PLACE | 1418



Rotor	
max. RPM I max. RCF	4,500 min^{-1} I 3,305
max. capacity	8 x 50 ml
run-up I run-down, braked in sec	30 I 31
angle I max. noise level	45° I 54 dB (A)
temperature in °C [1]	-11
Cat. No.	**1418**

Vessels															
capacity in ml	5	15	1.1–1.4	2.6–3.4	2,7–3	9–10	1.6–5	4–7	8.5–10	12	15	50	12	50	50
Ø x L in mm	12 x 75	17 x 100	8 x 66	13 x 65	11 x 66	16 x 92	13 x 75	13 x 100	16 x 100	17 x 102	17 x 120	29 x 115	17 x 100	29 x 115	29 x 107
max. RCF [2]	2,762	3,215	2,762	2,762	2,762	3,215	2,762	3,305	3,215	3,215	3,283	3,147	3,215	3,147	3,147
radius in mm	122	142	122	122	122	142	122	146	142	142	145	139	142	139	139
Cat. No.	**tubes [2]**		**blood collection / urine vessels**								**tubes with screw cap**				
+	+ 1054-A	+ 0716	+ 1054-A	+ 1054-A	+ 1054-A	+ 0716	+ 1054-A		+ 0716	+ 0716	+ E2109	+ E2110-A	+ 0716		
Carrier															
boring Ø x L in mm	17.4 x 91	17.4 x 91	17.4 x 91	17.4 x 91	17.4 x 91	17.4 x 91	17.4 x 91	17.4 x 91	17.4 x 91	17.4 x 91	17.4 x 91	30.2 x 92	17.4 x 91	30.2 x 92	30.2 x 92
vessels per rotor	32	32	32	32	32	32	32	32	32	32	32	8	32	8	8
Cat. No.	**1467**	**1467**	**1467**	**1467**	**1467**	**1467**	**1467**	**1467**	**1467**	**1467**	**1467**	**1468**	**1467**	**1468**	**1468**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

PACKAGES

UNIVERSAL 320 BLOOD TUBE PACKAGE 1

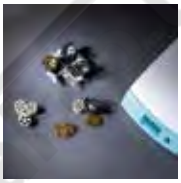
		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x UNIVERSAL 320 centrifuge	1401	28	1.6 - 7	13 x 75 / 100	5,000	3,913
- 1 x swing-out rotor, 4-place	1494	28	4 - 10	16 x 75 / 100	5,000	3,913
- 4 x bucket	1425					
- 4 x adapter, 7-place	1438					
- 4 x adapter, 7-place	1441					

1401SET1

UNIVERSAL 320 BLOOD TUBE PACKAGE 2

		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x UNIVERSAL 320 centrifuge	1401	28	1.6 - 7	13 x 75 / 100	4,500	3,328
- 1 x swing-out rotor, 4-place	1554	28	4 - 10	16 x 75 / 100	4,500	3,328
- 4 x bucket	1560					
- 4 x lid (bioseal)	1561					
- 4 x adapter, 7-place	1589					
- 4 x adapter, 5-place	1588					

1401SET2



UNIVERSAL 320 CONICAL PACKAGE 3

		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x UNIVERSAL 320 centrifuge	1401	16	15	17 x 120	4,500	3,305
- 1 x swing-out rotor, 4-place	1324	4	50	29 x 115	4,500	3,260
- 4 x bucket	1398					
- 4 x adapter, 4-place (conical)	1483A					
- 4 x adapter, 1-place (conical)	1484					

1401SET3

UNIVERSAL 320 R CONICAL PACKAGE 1

		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x UNIVERSAL 320 R centrifuge	1406	16	15	17 x 120	4,500	3,305
- 1 x swing-out rotor, 4-place	1554	4	50	29 x 115	4,500	3,260
- 4 x bucket	1560					
- 4 x lid (bioseal)	1561					
- 4 x adapter, 2-place (conical)	1577					
- 4 x adapter, 1-place (conical)	1579					

1406SET1

UNIVERSAL 320 R BLOOD TUBE PACKAGE 2

		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x UNIVERSAL 320 R centrifuge	1406	28	1.6 - 7	13 x 75 / 100	5,000	3,913
- 1 x swing-out rotor, 4-place	1494	28	4 - 10	16 x 75 / 100	5,000	3,913
- 4 x bucket	1425					
- 4 x adapter, 7-place	1438					
- 4 x adapter, 7-place	1441					

1406SET2

UNIVERSAL 320 R CONICAL PACKAGE 3

		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x UNIVERSAL 320 R centrifuge	1406	16	15	17 x 120	4,500	3,305
- 1 x swing-out rotor, 4-place	1324	4	50	29 x 115	4,500	3,260
- 4 x bucket	1398					
- 4 x adapter, 4-place (conical)	1483A					
- 4 x adapter, 1-place (conical)	1484					

1406SET3

UNIVERSAL 320 R BLOOD TUBE PACKAGE 4

		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x UNIVERSAL 320 R centrifuge	1406	28	1.6 - 7	13 x 75 / 100	4,000	2,558
- 1 x swing-out rotor, 4-place	1624	28	4 - 10	16 x 75 / 100	4,000	2,665
- 4 x bucket	1481					
- 4 x lid (bioseal)	1492					
- 4 x adapter, 5-place	1383					
- 4 x adapter, 4-place	1348					

1406SET4

UNIVERSAL 320 R BLOOD TUBE PACKAGE 5		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x UNIVERSAL 320 R centrifuge	1406	28	1.6 - 7	13 x 75 / 100	5,000	3,913
- 1 x swing-out rotor, 4-place	1554	28	4 - 10	16 x 75 / 100	5,000	3,913
- 4 x bucket	1560					
- 4 x lid (biodicht)	1561					
- 4 x adapter, 7-place	1589					
- 4 x adapter, 5-place	1588					
1406SET5						

UNIVERSAL 320 R BLOOD TUBE PACKAGE 6		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x UNIVERSAL 320 R centrifuge	1406	28	1.6 - 7	13 x 75 / 100	5,000	3,913
- 1 x swing-out rotor, 4-place	1494	28	4 - 10	16 x 75 / 100	5,000	3,913
- 4 x bucket	1427					
- 4 x lid (bioseal)	1421					
- 4 x adapter, 8-place	1732					
- 4 x adapter, 6-place	5231					
1406SET6						

ROTINA 380 | 380 R

High speed with space saving design

High performance unit supporting a wide array of accessories for multiple applications in just one rotor. Its size and performance make it the ideal benchtop centrifuge for most clinical, reaearch and industrial laboratories. This unit is available with refrigeration and a temperature range from -20 °C to +40 °C (ROTINA 380 R).

FEATURES

- RPM: 50 - 15,000 min $^{-1}$ – adjustable in increments of 10
- RCF: 50 - 24,400 – adjustable in increments of 1
- Max. capacity: 4 x 290 ml
- Choice of 8 rotors
- IVD-conform according to directive 98/79/EC
- Max. noise level of 54 dB(A) with rotor 1760
- Easy operation with keypad and control knob
- 98 program memories for more individuality
- 9 individual acceleration and 10 deceleration stages
- Model 380 R coolable from -20 to +40 °C with pre-cooling function

FIELDS OF APPLICATION

- Hospitals
- Hematological laboratories
- Small blood centers
- Veterinary laboratories
- Pharmaceutical laboratories
- Food analyzing laboratories
- University / Academic research
- Forensic laboratories
- Paternity testing laboratories
- Environmental testing laboratories
- Cell culture laboratories

Centrifuge packages for the model can be found on page 99

More information about the control panel can be found on page 198

CYTO Cyto system available for this model. More information on page 178

IVD CONFORM
according to directive 98/79/EC

ROTINA 380

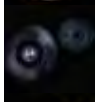
ROTINA 380 R

TECHNICAL DATA

	ROTINA 380 non-refrigerated	**ROTINA 380 R** refrigerated
voltage *)	200 – 240 V 1 ~	200 – 240 V 1 ~
frequency	50 – 60 Hz	50 – 60 Hz
consumption	650 VA	1,300 VA
emission, immunity	EN/IEC 61326-1, class B	EN/IEC 61326-1, class B
max. capacity	4 x 290 ml	4 x 290 ml
max. RPM	15,000 min^{-1}	15,000 min^{-1}
max. RCF	24,400	24,400
running time	1 – 99 h: 59 min: 59 sec, ∞ continuous run, short cycle mode	1 – 99 h: 59 min: 59 sec, ∞ continuous run, short cycle mode
dimensions (W x D x H)	457 x 600 x 418 mm	457 x 750 x 418 mm
weight	approx. 51 kg	approx. 81 kg
noise level	54 dB (A) with rotor 1760	54 dB (A) with rotor 1760
temperature control, infinitely variable	-	from -20 to +40 °C
Cat. No.	**1701**	**1706**
100 – 127 V 1 ~ / 50 – 60 Hz *)	1701-01	1706-01
consumption	700 VA	1,400 VA
emission, immunity	FCC class B	FCC class B
weight	approx. 58.5 kg	approx. 88.5 kg

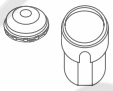
*) Other voltages on request.

AVAILABLE ROTORS

SWING-OUT ROTORS	angle	max. RPM	max. capacity	Cat. No.	page
 swing-out rotor, 4-place	90°	5,000 min^{-1}	4 x 290 ml	**1754**	90
 swing-out rotor, 4-place	90°	4,000 min^{-1}	4 x 290 ml	**1798**	92
 swing-out rotor, 6-place	90°	4,000 min^{-1}	6 x 50 ml	**1726**	94
 swing-out rotor, 2-place	90°	4,000 min^{-1}	10 plates	**1760**	96
 swing-out rotor, 2-place	90°	5,100 min^{-1}	12 plates	**1770**	96
ANGLE ROTORS					
 angle rotor, 6-place	45°	10,000 | 11,000 min^{-1}	6 x 94 ml	**1720**	97
 angle rotor, 6-place	45°	10,000 | 11,000 min^{-1}	6 x 94 ml	**1792**	98
 angle rotor, 30-place	45°	15,000 min^{-1}	30 x 2 ml	**1789-A**	99

SWING-OUT ROTOR, 4-PLACE | 1754

Rotor	
max. RPM I max. RCF	5,000 min^{-1} I 4,863
max. capacity	4 x 290 ml
run-up I run-down, braked in sec	42 I 27
angle I max. noise level	90° I 60 dB (A)
temperature in °C [1]	0
Cat. No.	**1754**



Bucket	
lid bioseal [5]	1751
Cat. No.	**1752**

Vessels																
capacity in ml		1.5	2.0	3	4	5	6	7	9	15	20	25	45	50	94	100
Ø x L in mm		11 x 38	11 x 38	10 x 60	12 x 60	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	21 x 100	24 x 100	31 x 100	34 x 100	38 x 102	40 x 115
max. RCF [2]	top / bottom	3,494 / 4,779	3,494 / 4,779	4,779	4,668	4,668	4,668	4,668	4,668	4,668	4,668	4,668	4,668	4,668	4,807	4,640
radius in mm	top / bottom	125 / 171	125 / 171	171	167	167	167	167	167	167	167	167	167	167	172	166
Cat. No.		**microliter tubes**		**tubes [2]**												
Adapter																
boring Ø x L in mm		11.2 x 39.5	11.2 x 39.5	11.2 x 39.5	12.5 x 56	12.5 x 56	12.5 x 56	12.5 x 56	17.5 x 62	17.5 x 62	25.5 x 81	25.5 x 81	35.5 x 81	35.5 x 81	38.5 x 80	41 x 97
vessels per rotor		144	144	72	96	96	96	96	52	52	24	24	12	12	8	4
Cat. No.		**1761**	**1761**	**1761**	**1762-A**	**1762-A**	**1762-A**	**1762-A**	**1763-A**	**1763-A**	**1764**	**1764**	**1765**	**1765**	**1777**	**1767**

Vessels																
capacity in ml		100	250	1.1–1.4	2.6–3.4	2.7–3	4–5.5	4.5–5	4.5–5	4.9	4.9	7.5–8.5	9–10	10	1.6–5	4–7
Ø x L in mm		44 x 100	65 x 115	8 x 66	13 x 65	11 x 66	15 x 75	11 x 92	11 x 92	13 x 90	13 x 90	15 x 92	16 x 92	15 x 102	13 x 75	13 x 100
max. RCF [2]		4,640	4,640	4,668	4,668	4,668	4,668	4,668	4,668	4,668	4,668	4,668	4,668	4,668	4,668	4,668
radius in mm		166	166	167	167	167	167	167	167	167	167	167	167	167	167	167
Cat. No.		**tubes [2]**		**blood collection tubes / urine tubes**												
Adapter																
boring Ø x L in mm		45 x 87	66 x 104.5	9 x 49	13.5 x 54	12.5 x 56	17.5 x 62	12.5 x 56	13.2 x 72	13.5 x 54	13.2 x 72	17.5 x 62	17.5 x 62	17.5 x 62	13.5 x 54	13.5 x 54
vessels per rotor		4	4	96	64	96	52	96	76	64	76	52	52	52	64	64
Cat. No.		**1766**	**1768**	**1781**	**1783-A**	**1762-A**	**1763-A**	**1762-A**	**1787**	**1783-A**	**1787**	**1763-A**	**1763-A**	**1763-A**	**1783-A**	**1783-A**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
5) Tested by TÜV in conformity with DIN EN 61010, section 2 - 020.

SWING-OUT ROTOR, 4-PLACE | 1754

Rotor	
max. RPM I max. RCF	5,000 min^{-1} I 4,863
max. capacity	4 x 290 ml
run-up I run-down, braked in sec	42 I 27
angle I max. noise level	90° I 60 dB (A)
temperature in °C [1]	0
Cat. No.	**1754**

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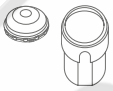

Bucket	
lid bioseal [5]	1751
Cat. No.	**1752**

Vessels															
capacity in ml	4 – 7	4 – 7	8	8.5 – 10	5	15	50	12	25	30	50	50	14	10	30
Ø x L in mm	13 x 100	16 x 75	16 x 125	16 x 100	17 x 59	17 x 120	29 x 115	17 x 100	25 x 90	25 x 110	29 x 115	29 x 115	16,5x106	16 x 80	26 x 95
max. RCF [2]	4,668	4,668	4,668	4,668	4,863	4,863	4,863	4,696	4,528	4,528	4,752	4,752	4,668	4,668	4,807
radius in mm	167	167	167	167	174	174	174	168	162	162	170	170	167	167	172
Cat. No.	**blood collection tubes / urine tubes**				**-**	**tubes with screw cap**									

+

Adapter															
boring Ø x L in mm	13.2 x 72	17.5 x 62	17.5 x 62 [21]	17.5 x 62	17 x 52	17 x 84	30 x 84	17 x 78	26.5 x 72	26.5 x 72	30 x 80	30 x 80 + E2110-A	17.5 x 62	17.5 x 62	26.5 x 70
vessels per rotor	76	52	12	52	32	36	16	36	20	20	16	16	52	52	24
Cat. No.	**1787**	**1763-A**	**1763-A**	**1763-A**	**1738**	**1771-A**	**1772-A**	**1773**	**1779**	**1779**	**1774-A**	**1774-A**	**1763-A**	**1763-A**	**1775**

Vessels									
capacity in ml	50	85	94	175	175	200	225	250	290
Ø x L in mm	29 x 107	38 x 106	38 x 102	61 x 118	62 x 144	60 x 130	61 x 137	61 x 122	62 x 137
max. RCF [2]	4,752	4,807	4,807	4,863	4,863	4,863	4,863	4,863	4,863
radius in mm	170	172	172	174	174	174	174	174	174
Cat. No.	**tubes with screw cap**			**Falcon**	**Nalgene** [3.3]	**Nunc®**	**Falcon**	**5127** [24]	**-** [3.3] [24]

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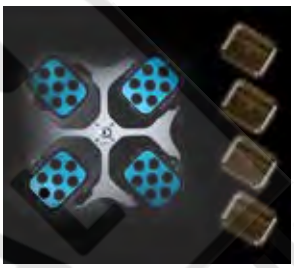
Adapter									
boring Ø x L in mm	30 x 80	38.5 x 80	38.5 x 80	62 x 111	62 x 111	62 x 111	62 x 111	62 x 100	62 x 100
vessels per rotor	16	8	8	4	4	4	4	4	4
Cat. No.	**1774-A**	**1777**	**1777**	**1782**	**1778**	**1778**	**1782**	**1769**	**1769**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3.3) When using these tubes, bucket 1752 or 5051 cannot be closed with lid 1751 or 5053.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
21) Adapter must be loaded as illustrated.
24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

SWING-OUT ROTOR, 4-PLACE | 1798



Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,898
max. capacity	4 x 100 ml
run-up I run-down, braked in sec	24 I 17
angle I max. noise level	90° I 55 dB (A)
temperature in °C [1]	-8
Cat. No.	**1798**

Bucket	
lid	5053
Cat. No.	**5051**

Vessels														
capacity in ml	1.5	2	1.5	2	3	5	6	7	9	15	25	50	100	100
Ø x L in mm	11 x 38	11 x 38	11 x 38	11 x 38	10 x 60	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	24 x 100	34 x 100	40 x 115	44 x 100
max. RCF [2] top / bottom	1,950 / 2,826	1,950 / 2,826	2,826	2,826	2,737	2,773	2,773	2,755	2,773	2,755	2,755	2,755	2,755	2,755
radius in mm	109 / 158	109 / 158	158	158	153	155	155	154	155	154	154	154	154	154
Cat. No.	**microliter tubes**				**tubes [2]**									
Adapter														
boring Ø x L in mm	12.5 x 42	12.5 x 42	11.5 x 50	11.5 x 50	11 x 44	12.5 x 42	12.5 x 42	12.5 x 86	16 x 50	17.5 x 86	26 x 86	36 x 86	42 x 86	45.5 x 86
vessels per rotor	160	160	64	64	80	80	80	80	48	48	20	8	4	4
Cat. No.	**5257**	**5257**	**5281**	**5281**	**5267**	**5227**	**5227**	**5247 [15]**	**5264**	**5248 [15]**	**5242**	**5243**	**5249**	**5262**

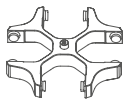
Vessels												
capacity in ml	1.1 – 1.4	2.6 – 3.4	2.7 – 3	4 – 5.5	4.5 – 5	4.9	7.5 – 8.5	9 – 10	10	1.6 – 5	4 – 7	4 – 7	8.5 – 10
Ø x L in mm	8 x 66	13 x 65	11 x 66	15 x 75	11 x 92	13 x 90	15 x 92	16 x 92	15 x 102	13 x 75	13 x 100	16 x 75	16 x 100
max. RCF [2]	2,737	2,808	2,773	2,773	2,773	2,808	2,773	2,755	2,755	2,808	2,808	2,773	2,755
radius in mm	153	157	155	155	155	157	155	154	154	157	157	155	154
Cat. No.	**blood collection tubes / urine tubes**												
Adapter													
boring Ø x L in mm	11 x 44	13.5 x 52	12.5 x 42	16 x 50	12.5 x 42	13.5 x 52	16 x 50	17.6 x 86	17.6 x 86	13.5 x 52	13.5 x 52	16 x 50	17.5 x 86
vessels per rotor	80	48	80	48	80	48	48	44	44	48	48	48	48
Cat. No.	**5267**	**5268**	**5227**	**5264**	**5227**	**5268**	**5264**	**5258**	**5258**	**5268**	**5268**	**5264**	**5248**

Vessels							
capacity in ml	30	50	15	12	30	50	1 – 8
Ø x L in mm	25 x 110	29 x 115	17 x 120	17 x 100	25 x 110	29 x 115	simple / multiple
max. RCF [2] top / bottom	2,755	2,826	2,898	2,898	2,755	2,755	1,735 / 2,737
radius in mm	154	158	162	162	154	154	97 / 153
Cat. No.	**tubes with screw cap**						**cyto chambers**
Adapter						+ 2 x 6316	
boring Ø x L in mm	26 x 86	30 x 86	17 x 90	17 x 90	26 x 86	36 x 86	-
vessels per rotor	20	8	28	28	20	8	8
Cat. No.	**5266**	**5259**	**6306**	**6306**	**5266**	**5243**	**5280**

CYTO Cyto system available for this model.
More information on page 178

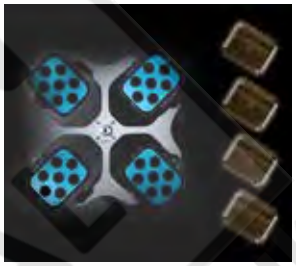
1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3.3) When using these tubes, bucket 1752 or 5051 cannot be closed with lid 1751 or 5053.
15) Also available with decanting aid. (Cat. No. 5247-91 or 5248-91).

SWING-OUT ROTOR, 4-PLACE | 1798



Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 3,095
max. capacity	4 x 290 ml
run-up I run-down, braked in sec	24 I 17
angle I max. noise level	90° I 56 dB (A)
temperature in °C [1]	-8
Cat. No.	**1798**

Bucket	
lid bioseal [5]	5093
Cat. No.	**5092**



Vessels															
capacity in ml	5	6	7	15	25	50	100	100	250	15	30	50	12	25	30
Ø x L in mm	12 x 75	12 x 82	12 x 100	17 x 100	24 x 100	34 x 100	44 x 100	40 x 115	65 x 115	17 x 120	25 x 110	29 x 115	17 x 100	25 x 90	25 x 110
max. RCF [2]	3,005	3,005	3,005	2,952	2,898	2,952	2,952	2,952	3,095	3,095	2,898	3,095	3,005	2,826	2,898
radius in mm	168	168	168	165	162	165	165	165	173	173	162	173	168	158	162
Cat. No.	tubes [2]									tubes with screw cap					
Adapter															
boring Ø x L in mm	12.8 x 45	12.8 x 45	13.2 x 82	17.5 x 60.7	25.5 x 82	35.5 x 85	45.5 x 85	42 x 85	66 x 103	17 x 85	25.5 x 82	30 x 85	17.5 x 82	26 x 73	25.5 x 82
vessels per rotor	48	48	48	32	16	4	4	4	4	28	16	8	28	12	16
Cat. No.	**5128**	**5128**	**5120**	**5136**	**5122**	**5124**	**5125**	**5126**	**1791**	**5129**	**5122**	**5123**	**5121**	**5134**	**5122**

Vessels															
capacity in ml	50	10	250	290	1.1 – 1.4	2.6 – 3.4	2.7 – 3	4 – 5.5	4.5 – 5	4.9	7.5 – 8.5	9 – 10	10	1.6 – 5	4 – 7
Ø x L in mm	29 x 115	16 x 80	61 x 122	62 x 137	8 x 66	13 x 65	11 x 66	15 x 75	11 x 92	13 x 90	15 x 92	16 x 92	15 x 102	13 x 75	16 x 75
max. RCF [2]	3,023	2,952	3,095	3,095	2,540	2,540	2,540	2,952	3,005	2,952	2,952	2,952	2,952	2,540	2,952
radius in mm	169	165	173	173	142	142	142	165	168	165	165	165	165	142	165
Cat. No.	tubes with screw cap		5127 [24]	- [24]	blood collection tubes / urine tubes										
Adapter															
boring Ø x L in mm	30 x 99	17.5 x 60.7	66 x 103	66 x 103	13.2 x 54.5	13.2 x 54.5	13.2 x 54.5	17.5 x 60.7	13.2 x 82	13.5 x 60.7	17.5 x 60.7	17.5 x 60.7	17.5 x 60.7	13.2 x 54.5	17.5 x 60.7
vessels per rotor	8	32	4	4	48	48	48	32	48	32	32	32	32	48	32
Cat. No.	**5135**	**5136**	**6319**	**6319**	**5138**	**5138**	**5138**	**5136**	**5120**	**5137**	**5136**	**5136**	**5136**	**5138**	**5136**

Vessels			
capacity in ml	4 – 7	8	8.5 – 10
Ø x L in mm	13 x 100	16 x 125	16 x 100
max. RCF [2]	3,005	3,059	2,952
radius in mm	168	171	165
Cat. No.	blood collection / urine tubes		
Adapter			
boring Ø x L in mm	13.2 x 82	17.5 x 82	17.5 x 60.7
vessels per rotor	48	28	32
Cat. No.	**5120**	**5121** [4]	**5136**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers.
The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3.5) When using these tubes, bucket 5092 cannot be closed with lid 5053.
4) Please remove the spacer.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

SWING-OUT ROTOR, 6-PLACE | 1726

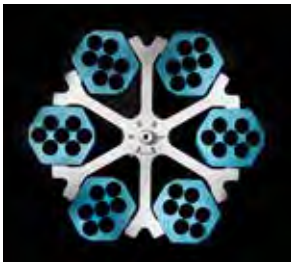
Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,808
max. capacity	6 x 50 ml
run-up I run-down, braked in sec	19 I 18
angle I temperature in °C [1]	90° I -6
Cat. No.	**1726**

Vessels													
capacity in ml	5	5	6	7	9	15	20	25	45	50	8.5 x 10	30	1–8
Ø x L in mm	12x75	12x75	12x82	12x100	14x100	17x100	21x100	24x100	31x100	34x100	16x100	26x95	simple / multiple
max. RCF [2]	2,576	2,522	2,665	2,665	2,665	2,665	2,719	2,808	2,719	2,808	2,665	2,808	2,003
radius in mm	144	141	149	149	149	149	152	157	152	157	149	157	112
Cat. No.	**tubes [2]**										**-**	**-**	**cyto chambers**

+ Carrier	with decanting aid		with decanting aid	with decanting aid									
boring Ø x L in mm	12.5x64.4	13.5x65	12.5x71.5	12.5x71.5	14.6x74	17.6x71.5	21.5x74	26x78	32x74	35x78	17.6x71.5	26x78	-
vessels per rotor	24	102	24	24	30	24	12	12	6	6	24	12	6
Cat. No.	**1369-91**	**1372**	**1369-92**	**1369-92**	**1370**	**1369**	**1346**	**1745**	**1345**	**1746**	**1369**	**1745**	**1660**

CYTO Cyto system available for this model.
More information on page 178

SWING-OUT ROTOR, 6-PLACE | 1726



Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,808
max. capacity	42 x 15 ml
run-up I run-down, braked in sec	19 I 18
angle I max. noise level	90° I 54 dB (A)
temperature in °C [1]	-6
Cat. No.	**1726**

+ **Carrier** Cat. No. **1742**

Vessels										
capacity in ml	15	2.6–3.4	4–5.5	7.5–8.5	9–10	10	1.6–5	4–7	8.5–10	15
Ø x L in mm	17x100	13x65	15x75	15x92	16x92	15x102	13x75	16x75	16x100	17x120
max. RCF [2]	2,808	2,683	2,683	2,808	2,808	2,808	2,683	2,683	2,808	2,808
radius in mm	157	150	150	157	157	157	150	150	157	157
Cat. No.	**- [2]**	**blood collection tubes / urine tubes**								**-**

+ Spacer		Spacer	Spacer			[21]	Spacer	Spacer		[21]
boring Ø x L in mm	17.6 x 78	17.6 x 78	17.6 x 78	17.6 x 78	17.6 x 78	17.6 x 78	17.6 x 78	17.6 x 78	17.6 x 78	17.6 x 78
vessels per rotor	42	42	42	42	42	18	42	42	42	18
Cat. No.	**-**	**0716**	**0716**	**-**	**-**	**-**	**0716**	**0716**	**-**	**-**

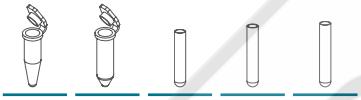
1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers.
The max. RCF for glass tubes annotated with footnote 2) is 4,000.
21) Adapter must be loaded as illustrated.

SWING-OUT ROTOR, 6-PLACE | 1726

Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,325
max. capacity	72 x 4 ml
run-up I run-down, braked in sec	19 I 18
angle I max. noise level	90° I 54 dB (A)
temperature in °C [1]	-6
Cat. No.	**1726**

+

Bucket	
Cat. No.	**1366**



Vessels					
capacity in ml	1.5	2.0	1	3	4
Ø x L in mm	11 x 38	11 x 38	6 x 45	10 x 60	12 x 60
max. RCF [2]	2,325	2,325	2,308	2,290	2,290
radius in mm	130	130	129	128	128
Cat. No.	**microliter tubes**		**Rhesus**	**tubes [2]**	

+

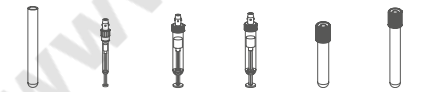
Adapter					
boring Ø x L in mm	11.5 x 38	11.5 x 38	6.5 x 23	10.5 x 23	12.5 x 44
vessels per rotor	54	54	180	72	72
Cat. No.	**5277**	**5277**	**1357**	**1327**	**1326**

SWING-OUT ROTOR, 6-PLACE | 1726

Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,808
max. capacity	60 x 9 ml
run-up I run-down, braked in sec	19 I 18
angle I max. noise level	90° I 54 dB (A)
temperature in °C [1]	-6
Cat. No.	**1726**

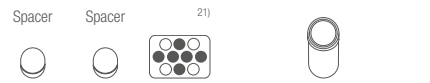
+

Carrier	
Cat. No.	**1741**



Vessels						
capacity in ml	9	1.1 – 1.4	4.5 – 5	4.9	1.6 – 5	4 – 7
Ø x L in mm	14 x 100	8 x 66	11 x 92	13 x 90	13 x 75	13 x 100
max. RCF [2]	2,773	2,773	2,808	2,808	2,486	2,808
radius in mm	155	155	157	157	139	157
Cat. No.	**- [2]**	**blood collection tubes / urine tubes**				

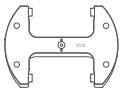
+



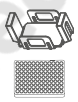
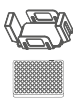
Adapter						
boring Ø x L in mm	14.6 x 78	14.6 x 78	14.6 x 78	14.6 x 78	14.6 x 78	14.6 x 78
vessels per rotor	60	60	36	60	60	60
Cat. No.	**0701**	**0701**	**-**	**-**	**6x0768 [16]**	**-**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
16) Packaging unit 10 pieces.
21) Adapter must be loaded as illustrated.

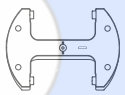
SWING-OUT ROTOR, 2-PLACE | 1760

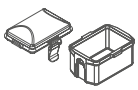
Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,397
max. capacity	10 plates
run-up I run-down, braked in sec	30 I 23
angle I max. noise level	90° I 54 dB (A)
temperature in °C [1]	-8
Cat. No.	**1760**

Plates									
W x D x H in mm	128x86x15	128x86x17.5	128x86x22	128x86x44.5	128x86x46	128x86x83	84x59x11	124x82x20	-
capacity in ml	-	-	-	-	-	-	-	-	0.2
max. RCF [2]	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397	2,397
radius in mm	134	134	134	134	134	134	134	134	134
Cat. No.	**MTP**	**MTP**	**CP**	**DWP**	**MS**	**QP**	**Microtest plates**	**PCR plate**	**PCR strips**

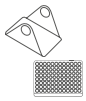
Bucket									
boring Ø x L in mm	-	-	-	-	-	-	-	-	-
plates / strips per rotor	10	8	6	2	2	2	4	2	24 x 8
Cat. No.	**1753-A**	**1753-A**	**1753-A**	**1753-A**	**1753-A**	**1753-A**	**1753-A**	**1753-A+1485**	**1753-A+1485**

SWING-OUT ROTOR, 2-PLACE | 1770

Rotor	
max. RPM I max. RCF	5,100 min^{-1} I 3,926
capacity in ml	12 plates
run-up I run-down, braked in sec	65 I 30
angle I temperature in °C [1]	90° I -3
Cat. No.	**1770**

Bucket	
lid bioseal [5]	4627
Cat. No.	**4745**

Plates									
W x D x H in mm	128x86x15	128x86x17.5	128x86x22	128x86x44.5	128x86x46	128x86x83	84x59x11	124x82x20	-
Ø x L in mm	-	-	-	-	-	-	-	-	0,2
max. RCF [2]	3,926	3,926	3,926	3,926	3,926	3,926	3,926	3,926	3,926
radius in mm	135	135	135	135	135	135	135	135	135
Cat. No.	**MTP**	**MTP**	**CP**	**DWP**	**MS**	**QP**	**Microtest plates**	**PCR plate**	**PCR strips**

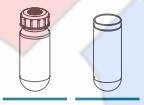
Removal frame									
boring Ø x L in mm	-	-	-	-	-	-	-	-	-
plates / strips per rotor	12	10	8	2	2	2	4	2	24 x 8
Cat. No.	**4626**	**4626**	**4626**	**4626**	**4626**	**4626**	**4626**	**4626 + 1485**	**4626 + 1485**

ANGLE ROTOR, 6-PLACE | 1720

Rotor		
max. RPM	ROTINA 380 I 380 R	10,000 min^{-1} I 11,000 min^{-1}
max. RCF		13,528 I 16,369
max. capacity		6 x 94 ml
run-up / run-down, braked in sec		39 / 36 I 45 / 44
angle I max. noise level		45° I 59 dB (A)
temperature in °C [1]		+1
Cat. No.		**1720**

Vessels																
capacity in ml		1.5	2.0	15	25	50	94	7.5 – 8.5	9 – 10	8.5 – 10	5	15	50	10	30	50
Ø x L in mm		11 x 38	11 x 38	17 x 100	24 x 100	34 x 100	38 x 102	15 x 92	16 x 92	16 x 100	17 x 59	17 x 120	29 x 115	16 x 80	26 x 95	29 x 107
max. RCF [2]	ROTINA 380	12,969	12,969	12,745	12,410	13,304	13,528	12,745	12,745	12,745	12,857	13,081	12,745	12,410	12,410	12,969
max. RCF [2]	ROTINA 380 R	15,692	15,692	15,422	15,016	16,098	16,369	15,422	15,422	15,422	15,557	15,828	15,422	15,016	15,016	15,692
radius in mm		116	116	114	111	119	121	114	114	114	115	117	114	111	111	116
Cat. No.		**microliter tubes**		**tubes [2]**				**blood collection tubes / urine tubes**			**-**	**tubes with screw cap**				

Adapter																
boring Ø x L in mm		11.4 x 39	11.4 x 39	17.5 x 92	26 x 85	35 x 89	38.4 x 89	17.5 x 92	17.5 x 92	17.5 x 92	17 x 51	17 x 106	29.8 x 97	16.5 x 74	26 x 85	29 x 92
vessels per rotor		24	24	6	6	6	6	6	6	6	6	6	6	12	6	6
Cat. No.		**1449**	**1449**	**1451**	**1447**	**1463**	**-**	**1451**	**1451**	**1451**	**1476**	**1466**	**1454**	**1448**	**1447**	**1446**



Vessels			
capacity in ml		85	94
Ø x L in mm		38 x 106	38 x 102
max. RCF [2]	ROTINA 380	13,528	13,528
max. RCF [2]	ROTINA 380 R	16,369	16,369
radius in mm		121	121
Cat. No.		**tubes with screw cap**	

Adapter			
boring Ø x L in mm		38.4x89	38.4x89
vessels per rotor		6	6
Cat. No.		**-**	**-**

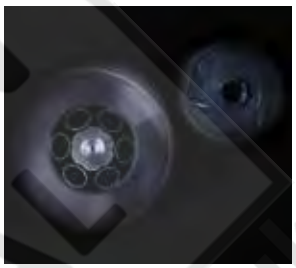
1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

ANGLE ROTOR, 6-PLACE | 1792

Rotor	
max. RPM ROTINA 380 I 380 R	10,000 min^{-1} I 11,000 min^{-1}
max. RCF	13,640 I 16,504
max. capacity	6 x 94 ml
run-up I run-down, braked in sec	40 / 37 I 48 / 44
angle I max. noise level	45° I 59 dB (A)
temperature in °C [1]	+4
Cat. No.	**1792**

+

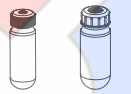
lid bioseal [5]	
Cat. No.	**INCLUSIVE**



Vessels																
capacity in ml		1.5	2.0	15	25	50	94	7.5 – 8.5	9 – 10	10	8.5 – 10	5	15	50	10	30
Ø x L in mm		11 x 38	11 x 38	17 x 100	24 x 100	34 x 100	38 x 102	15 x 92	16 x 92	15 x 102	16 x 100	17 x 59	17 x 120	29 x 115	16 x 80	26 x 95
max. RCF [2]	ROTINA 380	13,081	13,081	12,857	12,522	13,416	13,640	12,857	12,857	12,857	12,857	12,745	13,081	13,304	12,857	12,522
max. RCF [2]	ROTINA 380 R	15,828	15,828	15,557	15,151	16,233	16,504	15,557	15,557	15,557	15,557	15,422	15,828	16,098	15,557	15,151
radius in mm		117	117	115	112	120	122	115	115	115	115	114	117	119	115	112
Cat. No.		**microliter tubes**		**tubes** [2]				**blood collection tubes / urine tubes**				**-**	**tubes with screw cap**			

+

Adapter																
boring Ø x L in mm		11.4 x 39	11.4 x 39	17.5 x 92	26 x 85	35 x 89	38.2 x 89.6	17.5 x 92	17.5 x 92	17.5 x 92	17.5 x 92	17 x 51	17 x 106	29.8 x 97	16.5 x 74	26 x 85
vessels per rotor		24	24	6	6	6	6	6	6	6	6	6	6	6	12	6
Cat. No.		**1449**	**1449**	**1451**	**1447**	**1463**	**-**	**1451**	**1451**	**1451**	**1451**	**1476**	**1466**	**1454**	**1448**	**1447**



Vessels			
capacity in ml		50	85
Ø x L in mm		29 x 107	38 x 106
max. RCF [2]	ROTINA 380	13,081	13,640
max. RCF [2]	ROTINA 380 R	15,828	16,504
radius in mm		117	122
Cat. No.		**tubes with screw cap**	

+

Adapter		
boring Ø x L in mm	29 x 92	38.2 x 89.6
vessels per rotor	6	6
Cat. No.	**1446**	**-**

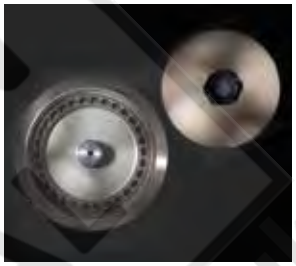
1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
5) Tested by TÜV in conformity with DIN EN 61010, section 2 - 020.

ANGLE ROTOR, 30-PLACE | 1789-A

Rotor	
max. RPM	max. RCF	15,000 min^{-1}	24,400 min^{-1}
max. capacity	30 x 2 ml
run-up	run-down, braked in sec	24	24
angle	max. noise level	45°	60 dB (A)
temperature in °C [1]	+4
Cat. No.	**1789-A**

+

Lid bioseal[5], phenol-resistant	
Cat. No.	**INCLUSIVE**



Vessels							
capacity in ml	0.2	0.4	0.5	0.8	1.5	2	0.5
Ø x L in mm	6 x 18	6 x 45	8 x 30	8 x 45	11 x 38	11 x 38	10.7 x 36
max. RCF [2]	24,400	24,400	24,400	24,400	24,400	24,400	23,394
radius in mm	97	97	97	97	97	97	93
Cat. No.	**microliter tubes**						**Pediatric**

+

Adapter							
boring Ø x L in mm	6 x 40	6 x 40	8 x 40	8 x 40	10.2x19.3	11.2x40.9	11.2x40.9
vessels per rotor	30	30	30	30	30	30	15
Cat. No.	**2024**	**2024**	**2023**	**2023**	**2031 [7]**	**-**	**0788 [17]**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
7) For centrifugation at high speeds, we recommend to use form-fitting, phenol-resistant adapters. Cat. No. 2031.
17) Packaging unit 15 pieces.

PACKAGES

ROTINA 380 BLOOD TUBE PACKAGE 1		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x ROTINA 380 centrifuge	1701	64	1.6 - 7	13 x 75 / 100	5,000	4,668
- 1 x swing-out rotor, 4-place	1754	52	4 - 10	16 x 75 / 100	5,000	4,668
- 4 x bucket	1752					
- 4 x lid (bioseal)	1751					
- 4 x adapter, 16-place	1783-A					
- 4 x adapter, 13-place	1763-A					
1701SET1						

ROTINA 380 CONICAL PACKAGE 2		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x ROTINA 380 centrifuge	1701	64	1.6 - 7	13 x 75 / 100	5,000	4,668
- 1 x swing-out rotor, 4-place	1754	52	4 - 10	16 x 75 / 100	5,000	4,668
- 4 x bucket	1752					
- 4 x adapter, 9-place (conical)	1771-A					
- 4 x adapter, 4-place (conical)	1772-A					
1701SET2						

ROTINA 380 R CONICAL PACKAGE 1		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x ROTINA 380 R centrifuge	1706	64	1.6 - 7	13 x 75 / 100	5,000	4,668
- 1 x swing-out rotor, 4-place	1754	52	4 - 10	16 x 75 / 100	5,000	4,668
- 4 x bucket	1752					
- 4 x adapter, 9-place (conical)	1771-A					
- 4 x adapter, 4-place (conical)	1772-A					
1706SET1						

ROTINA 380 R BLOOD TUBE PACKAGE 2		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x ROTINA 380 R centrifuge	1706	64	1.6 - 7	13 x 75 / 100	5,000	4,668
- 1 x swing-out rotor, 4-place	1754	52	4 - 10	16 x 75 / 100	5,000	4,668
- 4 x bucket	1752					
- 4 x lid (bioseal)	1751					
- 4 x adapter, 16-place	1783-A					
- 4 x adapter, 13-place	1763-A					
1706SET2						

ROTINA 420 | 420 R

Many solutions – one rotor

This compact benchtop centrifuge has been developed for large sample volumes. It has a maximum capacity of 4 x 600 ml bottles, 140 blood tubes, 16 microtiter plates or 52 x 15 ml conical tubes, all on a single cost-effective rotor. This unit is available with refrigeration and a temperature range from -20 °C to +40 °C (ROTINA 420 R).

FEATURES

- RPM: 50 - 15,000 min $^{-1}$ – adjustable in increments of 10
- RCF: 50 - 24,400 – adjustable in steps of 1
- Max. capacity: 4 x 600 ml
- High-performance with first-class equipment
- Choise of 5 rotors
- IVD-conform according to directive 98/79/EC
- Max. noise level of 51 dB(A) with rotor 4790-A
- Easy operation with keypad and control knob
- 98 program memories for more individuality
- 9 individual acceleration and deceleration stages
- Model 420 R coolable from -20 to +40 °C with pre-cooling function

FIELDS OF APPLICATION

- Hospitals
- Hematological laboratories
- Blood centers
- Veterinary laboratories
- Pharmaceutical laboratories
- Food analyzing laboratories
- University / Academic research

Centrifuge packages for the model can be found on page 109

More information about the control panel can be found on page 198

CYTO Cyto system available for this model. More information on page 178

IVD CONFORM
according to directive 98/79/EC

ROTINA 420

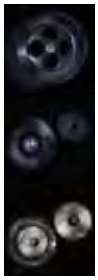
ROTINA 420 R

TECHNICAL DATA

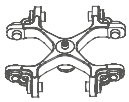
	ROTINA 420 non-refrigerated	**ROTINA 420 R** refrigerated
voltage *)	200–240 V 1 ~	200–240 V 1 ~
frequency	50–60 Hz	50 Hz
consumption	870 VA	1,600 VA
emission, immunity	EN/IEC 61326-1, class B	EN/IEC 61326-1, class B
max. capacity	4 x 600 ml	4 x 600 ml
max. RPM	15,000 min^{-1}	15,000 min^{-1}
max. RCF	24,400	24,400
running time	1 – 99 h: 59 min: 59 s, ∞ continuous run, short cycle mode	1 – 99 h: 59 min: 59 s, ∞ continuous run, short cycle mode
dimensions (W x D x H)	506 x 650 x 423 mm	713 x 654 x 423 mm
weight	approx. 75 kg	approx. 108 kg
noise level	51 dB (A) with rotor 4790-A	50 dB (A) with rotor 4790-A
temperature control, infinitely variable	-	from -20 to +40 °C
Cat. No.	**4701**	**4706**
100–127 V 1 ~ / 50–60 Hz *)	4701-01	4706-01
consumption	900 VA	1,850 VA
emission, immunity	FCC class B	FCC class B
weight	approx. 84 kg	approx. 117 kg

*) Other voltages on request.

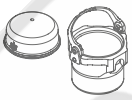
AVAILABLE ROTORS

SWING-OUT ROTORS	angle	max. RPM	max. capacity	Cat. No.	page
 swing-out rotor, 4-place	90°	4,800 min^{-1}	4 x 600 ml	**4784-A**	102
swing-out rotor, 4-place	90°	4,000 min^{-1}	4 x 290 ml	**4753**	104
ANGLE ROTORS					
 angle rotor, 4-place	25°	9,500 min^{-1}	4 x 250 ml	**4795**	106
angle rotor, 6-place	45°	11,000 min^{-1}	6 x 94 ml	**4794**	107
angle rotor, 30-place	45°	15,000 min^{-1}	30 x 2 ml	**4790-A**	108

SWING-OUT ROTOR, 4-PLACE | 4784-A

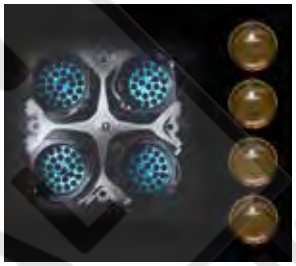


Rotor	
max. RPM I max. RCF	4,800 min^{-1} I 4,740
max. capacity	4 x 600 ml
run-up I run-down, braked in sec	54 I 38
angle I max. noise level	90° I 56 dB (A)
temperature in °C [1]	+4
Cat. No.	**4784-A**



Bucket with clamp lock	
lid bioseal [5]	4783
Cat. No.	**4780**

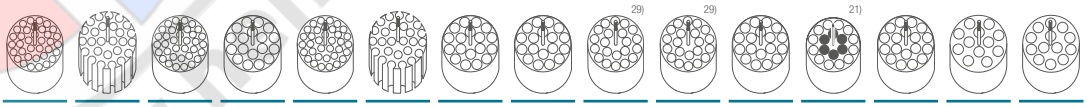
Bucket without clamp lock [14]	
Cat. No.	**4785**



Vessels															
capacity in ml	1.5	2.0	3	4	4	5	6	7	15	25	50	94	100	100	250
Ø x L in mm	11 x 38	11 x 38	10 x 60	10 x 88	12 x 60	12 x 75	12 x 82	12 x 100	17 x 100	24 x 100	34 x 100	38 x 102	40 x 115	44 x 100	65 x 115
max. RCF [2]	4,585	4,585	4,585	4,585	4,585	4,585	4,585	4,585	4,585	4,585	4,559	4,559	4,559	4,534	4,534
radius in mm	178	178	178	178	178	178	178	178	178	178	177	177	177	176	176
Cat. No.	**microliter tubes**		**tubes [2]**												

Adapter															
boring Ø x L in mm	11.2 x 38	11.2 x 38	11.2 x 54	11.2 x 54	13.4 x 55	13.4 x 55	13.4 x 55	13.4 x 55	17.5 x 62	26.5 x 69	36 x 77	42 x 76.5	42 x 76.5	46 x 76.5	66 x 97
vessels per rotor	96	96	140	140	104	104	104	104	72	28	16	12	12	8	4
Cat. No.	**4773**	**4773**	**4761**	**4761**	**4762**	**4762**	**4762**	**4762**	**4763**	**4764**	**4765**	**4766**	**4766**	**4767**	**4768**

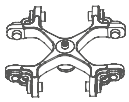
Vessels															
capacity in ml	1.1–1.4	2.6–3.4	2.7–3	4–5.5	4.5–5	4.9	7.5–8.5	9–10	1.6–7	1.6–7	4–7	8	8.5 – 10	5	15
Ø x L in mm	8 x 66	13 x 65	11 x 66	15 x 75	11 x 92	13 x 90	15 x 92	16 x 92	13 x 75	13 x 100	16 x 75	16 x 125	16 x 100	17 x 59	17 x 120
max. RCF [2]	4,585	4,585	4,585	4,585	4,585	4,585	4,585	4,585	4,585	4,585	4,585	4,585	4,585	4,740	4,740
radius in mm	178	178	178	178	178	178	178	178	178	178	178	178	178	184	184
Cat. No.	**blood collection / urine vessels**													**-**	**-**



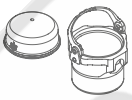
Adapter															
boring Ø x L in mm	11.2 x 54	13.4 x 55	11.2 x 54	17.5 x 62	11.2 x 54	13.4 x 55	17.5 x 62	17.5 x 62	13.7 x 55	13.7 x 55	17.5 x 62	17.5 x 62	17.5 x 62	17 x 52	17 x 84
vessels per rotor	140	104	140	72	140	104	72	72	84	84	72	24	72	48	52
Cat. No.	**4761**	**4762**	**4761**	**4763**	**4761**	**4762**	**4763**	**4763**	**4775**	**4775**	**4763**	**4763**	**4763**	**4778**	**4769**

1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3.6) When using these tubes, bucket 4780 cannot be closed with lid 4783.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
14) With the E3905 add-on kit and the 4783 lid, the 4785 carrier can be converted at a later time to a 4780 carrier with single-hand clamp lock.
21) Adapter must be loaded as illustrated.
29) Suitable for blood collection systems with a lid larger than 17 mm in diameter.

SWING-OUT ROTOR, 4-PLACE | 4784-A

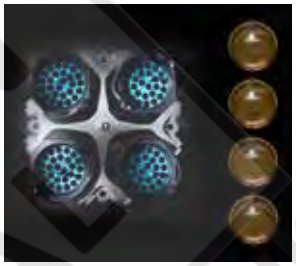


Rotor	
max. RPM I max. RCF	4,800 min^{-1} I 4,740
max. capacity	4 x 600 ml
run-up I run-down, braked in sec	54 I 38
angle I max. noise level	90° I 56 dB (A)
temperature in °C [1]	+4
Cat. No.	**4784-A**



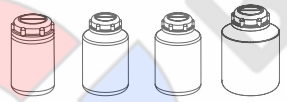
Bucket with clamp lock	
lid bioseal [5]	4783
Cat. No.	**4780**

Bucket without clamp lock [14]	
Cat. No.	**4785**



Vessels															
capacity in ml	50	12	25	30	50	10	30	50	85	94	175	175	200	225	250
Ø x L in mm	29 x 115	17 x 100	25 x 90	25 x 110	29 x 115	16 x 80	26 x 95	29 x 107	38 x 106	38 x 102	61 x 118	62 x 144	60 x 130	61 x 137	61 x 122
max. RCF [2]	4,688	4,688	4,585	4,585	4,688	4,585	4,585	4,688	4,534	4,534	4,740	4,740	4,740	4,740	4,740
radius in mm	182	182	178	178	182	178	178	182	176	176	184	184	184	184	184
Cat. No.	tubes with screw cap										**Falcon**	**Nalgene**	**Nunc®**	**Falcon**	**5127** [24]

Adapter															
boring Ø x L in mm	30 x 82.5	17.2x82.5	26.5 x 69	26.5 x 69	30 x 82.5	17.5 x 62	26.5 x 69	30 x 82.5	42 x 76.5	42 x 76.5	61 x 105	61.5x110	61.5x110	61 x 105	62 x 100
vessels per rotor	20	56	28	28	20	72	28	20	12	12	4	4	4	4	4
Cat. No.	**4770**	**4774**	**4764**	**4764**	**4770** [4]	**4763**	**4764**	**4770** [4]	**4766**	**4766**	**4776**	**4777**	**4777**	**4776**	**4771**

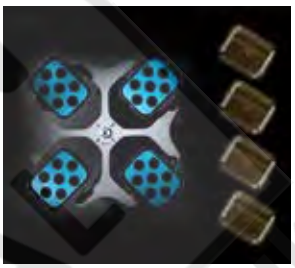


Vessels				
capacity in ml	290	400	400	600
Ø x L in mm	62 x 137	81 x 136	84 x 134	93 x 134
max. RCF [2]	4,740	4,740	4,740	4,740
radius in mm	184	184	184	184
Cat. No.	**-** [24]	**-** [24]	**-** [24]	**0551** [24]

Adapter				
boring Ø x L in mm	62 x 100	85 x 100	85 x 100	94 x 99
vessels per rotor	4	4	4	4
Cat. No.	**4771**	**4772**	**4772**	**-**

1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3.6) When using these tubes, carrier 4780 cannot be closed with lid 4783.
4) Please remove the spacer.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
13) The screw cap for tube No. 0538 is available with Cat. No. 0539. Dimensions with cap 38 x 110 mm.
21) Adapter must be loaded as illustrated.
24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

SWING-OUT ROTOR, 4-PLACE | 4753



Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 2,898
max. capacity	4 x 100 ml
run-up I run-down, braked in sec	18 I 16
angle I max. noise level	90° I 58 dB (A)
temperature in °C [1]	-1
Cat. No.	**4753**

Bucket	
lid	5053
Cat. No.	**5051**

Vessels														
capacity in ml		1.5	2	1.5	2	3	5	6	7	9	15	25	50	100	100
Ø x L in mm		11 x 38	11 x 38	11 x 38	11 x 38	10 x 60	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	24 x 100	34 x 100	44 x 100	40 x 115
max. RCF [2]	top / bottom	1,950 / 2,826	1,950 / 2,826	2,826	2,826	2,737	2,773	2,773	2,755	2,773	2,755	2,755	2,755	2,755	2,755
radius in mm	top / bottom	109 / 158	109 / 158	158	158	153	155	155	154	155	154	154	154	154	154
Cat. No.		**microliter tubes**				**tubes [2]**									
Adapter															
boring Ø x L in mm		12.5 x 42	12.5 x 42	11.5 x 50	11.5 x 50	11 x 44	12.5 x 42	12.5 x 42	12.5 x 86	16 x 50	17.5 x 86	26 x 86	36 x 86	45.5 x 86	42 x 86
vessels per rotor		160	160	64	64	80	80	80	80	48	48	20	8	4	4
Cat. No.		**5257**	**5257**	**5281**	**5281**	**5267**	**5227**	**5227**	**5247 [15]**	**5264**	**5248 [15]**	**5242**	**5243**	**5262**	**5249**

Vessels													
capacity in ml	1.1 – 1.4	2.6 – 3.4	2.7 – 3	4 – 5.5	4.5 – 5	4.9	7.5 – 8.5	9 – 10	10	1.6 – 5	4 – 7	4 – 7	8.5 – 10
Ø x L in mm	8 x 66	13 x 65	11 x 66	15 x 75	11 x 92	13 x 90	15 x 92	16 x 92	15 x 102	13 x 75	13 x 100	16 x 75	16 x 100
max. RCF [2]	2,737	2,808	2,773	2,773	2,773	2,808	2,773	2,755	2,755	2,808	2,755	2,773	2,755
radius in mm	153	157	155	155	155	157	155	154	154	157	154	155	154
Cat. No.	**blood collection / urine vessels**												
Adapter													
boring Ø x L in mm	11 x 44	13.5 x 52	12.5 x 42	16 x 50	12.5 x 42	13.5 x 52	16 x 50	17.6 x 86	17.6 x 86	13.5 x 52	13.5 x 86	16 x 50	17.5 x 86
vessels per rotor	80	48	80	48	80	48	48	44	44	48	48	48	48
Cat. No.	**5267**	**5268**	**5227**	**5264**	**5227**	**5268**	**5264**	**5258**	**5258**	**5268**	**6301**	**5264**	**5248**

Vessels						
capacity in ml	15	30	50	12	50	1 – 8
Ø x L in mm	17 x 120	25 x 110	29 x 115	17 x 100	29 x 115	simple / multiple
max. RCF [2]	2,898	2,755	2,826	2,898	2,755	1,735 / 2,737
radius in mm	162	154	158	162	154	97 / 153
Cat. No.	**tubes with screw cap**					**cyto chambers**
Adapter					+ 2 x 6316	
boring Ø x L in mm	17 x 90	26 x 66	30 x 86	17 x 90	36 x 86	-
vessels per rotor	28	20	8	28	8	8
Cat. No.	**6306**	**5266**	**5259**	**6306**	**5243**	**5280**

CYTO Cyto system available for this model.
More information on page 178

1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3.7) When using these tubes, bucket 4780 or 5051 cannot be closed with lid 4783 or 5053.

SWING-OUT ROTOR, 4-PLACE | 4753

Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 3,095
max. capacity	4 x 290 ml
run-up I run-down, braked in sec	18 I 16
angle I max. noise level	90° I 58 dB (A)
temperature in °C [1]	-1
Cat. No.	**4753**

Bucket	
lid bioseal [5]	5093
Cat. No.	**5092**

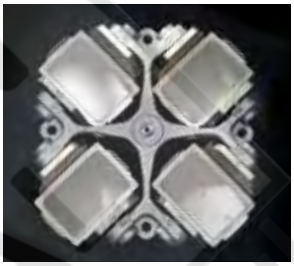
Vessels															
capacity in ml	5	6	7	15	25	50	100	100	250	1.1–1.4	2.6–3.4	2.7–3	4–5.5	4.5–5	4.9
Ø x L in mm	12x75	12x82	12x100	17x100	24x100	34x100	44x100	40x115	65x115	8 x 66	13 x 65	11x66	15x75	11x92	13x90
max. RCF [2]	3,005	3,005	3,005	2,952	2,898	2,952	2,952	2,952	3,095	2,540	2,540	2,540	2,952	3,005	2,952
radius in mm	168	168	168	165	162	165	165	165	173	142	142	142	165	168	165
Cat. No.	tubes [2]									blood collection / urine vessels					
Adapter															
boring Ø x L in mm	12.8x45	12.8x45	13.2x82	17.5x60.7	25.5x82	35.5x82.5	45.5x85	42x85	66x103	13.2x54.5	13.2x54.5	13.2x54.5	17.5x60.7	13.2x82	13.5x60.7
vessels per rotor	48	48	48	32	16	4	4	4	4	48	48	48	32	48	32
Cat. No.	**5128**	**5128**	**5120**	**5136**	**5122**	**5124**	**5125**	**5126**	**1791**	**5138**	**5138**	**5138**	**5136**	**5120**	**5137**

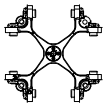
Vessels														
capacity in ml	7.5–8.5	9 – 10	10	1.6 – 5	4 – 7	4 – 7	8.5 – 10	8 [3.5]	15	50	12	25	30	50	10
Ø x L in mm	15x92	16x92	15x102	13x75	13x100	16x75	16x100	16x125	17x120	29x115	17x100	25x90	25x110	29x115	16 x 80
max. RCF [2]	2,952	2,952	2,952	2,540	3,005	2,952	2,952	3,059	3,095	3,095	3,005	2,826	2,898	3,023	2,952
radius in mm	165	165	165	142	168	165	165	171	173	173	168	158	162	169	165
Cat. No.	blood collection / urine vessels								tubes with screw cap						
Adapter															
boring Ø x L in mm	17.5x60.7	17.5x60.7	17.5x60.7	13.2x54.5	13.2x82	17.5x60.7	17.5x60.7	17.5x82	17x85	30x85	17.5x82	26x73	25.5x82	30x99	17.5x60.7
vessels per rotor	32	32	32	48	48	32	32	28	28	8	28	12	16	8	32
Cat. No.	**5136**	**5136**	**5136**	**5138**	**5120**	**5136**	**5136**	**5121** [4]	**5129**	**5123**	**5121**	**5134**	**5122**	**5135**	**5136**

Vessels		
capacity in ml	250	290
Ø x L in mm	61 x 122	62 x 137
max. RCF [2]	3,095	3,095
radius in mm	173	173
Cat. No.	**5127** [24]	**–** [24]
Adapter		
boring Ø x L in mm	66x103	66x103
vessels per rotor	4	4
Cat. No.	**6319**	**6319**

1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3.5) When using these tubes, bucket 5092 cannot be closed with lid 5053.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

SWING-OUT ROTOR, 4-PLACE | 4784-A



Rotor	
max. RPM I max. RCF	4,800 min^{-1} I 4,096
max. capacity	16 plates
run-up I run-down, braked in sec	54 I 38
angle I max. noise level	90° I 56 dB (A)
temperature in °C [1]	+4
Cat. No.	**4784-A**

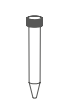
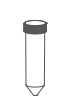
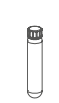
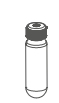
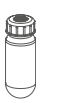
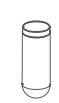
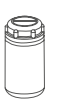
Bucket	
Cat. No.	**4782**

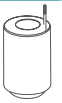
Plates								
W x D x H in mm	128x86x15	128x86x17.5	128x86x22	128x86x44.5	128x86x46	84x59x11	124x82x20	-
capacity in ml	-	-	-	-	-	-	-	0,2
max. RCF [2]	4,096	4,096	4,096	4,096	4,096	4,096	4,096	4,096
radius in mm	159	159	159	159	159	159	159	159
Cat. No.	**MTP**	**MTP**	**CP**	**DWP**	**MS**	**Microtest plate**	**PCR plate 96 wells**	**PCR strips**

Adapter								
boring Ø x L in mm	-	-	-	-	-	-	-	-
plates / strips per rotor	16	16	12	4	4	8	4	48 x 8
Cat. No.	**-**	**-**	**-**	**-**	**-**	**-**	**1485**	**1485**

ANGLE ROTOR, 4-PLACE | 4795

Rotor	
max. RPM I max. RCF	9,500 min^{-1} I 12,007
max. capacity	4x250 ml
run-up I run-down, braked in sec	45 I 55
angle	25°
temperature in °C [1]	+2
Cat. No.	**4795**

Vessels											
capacity in ml	15	25	94	15	50	10	30	50	85	94	250
Ø x L in mm	17x100	24x100	38x102	17x120	29x115	16x80	26x95	29x107	38 x 106	38 x 102	61 x 122
max. RCF [2]	11,301	10,897	10,292	10,998	10,090	11,402	10,897	10,090	10,292	10,292	12,007
radius in mm	112	108	102	109	100	113	108	100	102	102	119
Cat. No.	**tubes [2]**			**tubes with screw cap**							**5127 [24]**

Adapter											
boring Ø x L in mm	17.6x83	26x80	38.6x88	17x106	30x100	16.6x70	26x80	29x90	38.6 x 88	38.6 x 88	61.5x109
vessels per rotor	28	12	4	20	4	32	12	4	4	4	4
Cat. No.	**5646**	**5642**	**5644**	**5637**	**5638**	**5641**	**5642**	**5643**	**5644**	**5644**	**-**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

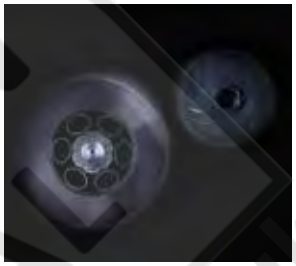
24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

ANGLE ROTOR, 6-PLACE | 4794

Rotor	
max. RPM I max. RCF	11,000 min^{-1} I 16,504
max. capacity	6 x 94 ml
run-up I run-down, braked in sec	40 I 63
angle I max. noise level	45° I 58 dB (A)
temperature in °C [1]	+4
Cat. No.	**4794**

+

Lid bioseal [5]	
Cat. No.	**INCLUSIVE**



Vessels																
capacity in ml	1.5 – 2	3	15	25	50	94	7.5 – 10	5	15	50	10	30	50	85	94
Ø x L in mm	11 x 38	10 x 60	17 x 100	24 x 100	34 x 100	38 x 102	15x102 / 16x92 [36]	17 x 59	17 x 120	29 x 115	16 x 80	26 x 95	29 x 107	38 x 106	38 x 102
max. RCF [2]	15,828	15,828	15,557	15,151	16,233	16,504	15,557	15,422	15,828	16,098	15,557	15,151	15,828	16,504	16,504
radius in mm	117	117	115	112	120	122	115	114	117	119	115	112	117	122	122
Cat. No.	**-**	**tubes [2]**					**-**	**-**	**tubes with screw cap**						

+

Adapter															
boring Ø x L in mm	11.4 x 39	11.4 x 39	17.5x92	26 x 85	35 x 89	38.2x89.6	17.5 x 92	17 x 51	17 x 106	29.8 x 97	16.5 x 74	26 x 85	29 x 92	38.2x89.6	38.2x89.6
vessels per rotor	24	24	6	6	6	6	6	6	6	6	12	6	6	6	6
Cat. No.	**1449**	**1449**	**1451**	**1447**	**1463**	**-**	**1451**	**1476**	**1466**	**1454**	**1448**	**1447**	**1446**	**-**	**-**

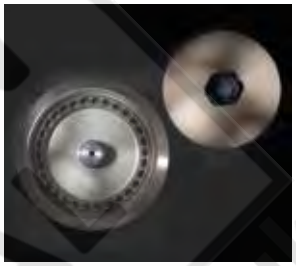
1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
36) Capacity in ml: 8.5-10 Ø x L in mm: 16 x 100.

ANGLE ROTOR, 30-PLACE | 4790-A

Rotor	
max. RPM I max. RCF	15,000 min^{-1} I 24,400
max. capacity	30 x 2 ml
run-up I run-down, braked in sec	19 I 24
angle I max. noise level	45° I 50 dB (A)
temperature in °C [1]	+4
Cat. No.	**4790-A**

+

Lid bioseal [5], phenol-resistant	
Cat. No.	**INCLUSIVE**



Vessels							
capacity in ml	0.2	0.4	0.5	0.8	1.5	2	0.5
Ø x L in mm	6 x 18	6 x 45	8 x 30	8 x 45	11 x 38	11 x 38	10.7 x 36
max. RCF [2]	24,400	24,400	24,400	24,400	24,400	24,400	23,394
radius in mm	97	97	97	97	97	97	93
Cat. No.	microliter tubes						Pediatric

+

Adapter							
boring Ø x L in mm	6 x 40	6 x 40	8 x 40	8 x 40	10.2x19.3	11.2x40.9	11.2x40.9
vessels per rotor	30	30	30	30	30	30	15
Cat. No.	**2024**	**2024**	**2023**	**2023**	**2031 [7]**	**-**	**0788 [17]**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
7) For centrifugation at high speeds, we recommend to use form-fitting, phenol-resistant adapters. Cat. No. 2031.
17) Packaging unit 15 pieces.

PACKAGES

ROTINA 420
BLOOD TUBE PACKAGE 1

		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x ROTINA 420 centrifuge	4701	64	1.6 - 7	13 x 75 / 100	4,800	4,585
- 1 x swing-out rotor, 4-place	4784-A	52	4 - 10	16 x 75 / 100	4,800	4,585
- 4 x bucket	4780					
- 4 x lid (bioseal)	4783					
- 4 x adapter, 26-place	4762					
- 4 x adapter, 18-place	4763					

4701SET1

ROTINA 420 CONICAL PACKAGE 2

		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x ROTINA 380 centrifuge	4701	64	1.6 - 7	13 x 75 / 100	5,000	4,668
- 1 x swing-out rotor, 4-place	4784-A	52	4 - 10	16 x 75 / 100	5,000	4,668
- 4 x bucket	4785					
- 4 x adapter, 13-place (conical)	4769					
- 4 x adapter, 5-place (conical)	4770					

4701SET2

ROTINA 420 R
BLOOD TUBE PACKAGE 1

		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x ROTINA 420 centrifuge	4706	64	1.6 - 7	13 x 75 / 100	5,000	4,668
- 1 x swing-out rotor, 4-place	4784-A	52	4 - 10	16 x 75 / 100	5,000	4,668
- 4 x bucket	4780					
- 4 x lid (bioseal)	4783					
- 4 x adapter, 26-place	4762					
- 4 x adapter, 18-place	4763					

4706SET1

ROTINA 420 R CONICAL PACKAGE 2

		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x ROTINA 420 R centrifuge	4706	64	1.6 - 7	13 x 75 / 100	5,000	4,668
- 1 x swing-out rotor, 4-place	4784-A	52	4 - 10	16 x 75 / 100	5,000	4,668
- 4 x bucket	4785					
- 4 x adapter, 13-place (conical)	4769					
- 4 x adapter, 5-place (conical)	4770					

4706SET2

ROTANTA 460 | 460 R

Superior benchtop for multi-purpose use

This powerful unit is capable of virtually any application you choose. It is able to spin high sample volumes of blood tubes, conical tubes, plates and bottles. Speciality buckets are able to accommodate 450 ml blood bags. This unit is available with refrigeration and a temperature range from -20 °C to +40 °C (ROTANTA 460 R).

FEATURES

- RPM: 50 - 15,000 min^{-1} – adjustable in increments of 10
- RCF: 50 - 24,400 min^{-1} – adjustable in increments of 1
- Max. Capacity: 4 x 1,000 ml
- Choice of 8 rotors
- Medical Device according to directive 93/42/EC
- 28 individual acceleration and deceleration stages
- Easy operation with keypad and control knob
- 98 program memories for more individuality
- Model 460 R coolable from -20 to +40 °C with pre-cooling function

FIELDS OF APPLICATION

- Hospitals
- Transfusion medicine laboratories
- Small blood centers
- Veterinary laboratories
- Pharmaceutical laboratories
- Food analayzing laboratories
- University / Academic research
- Oil laboratories
- Chemical industry
- Forensic laboratories

Centrifuge packages for the model can be found on page 126

More information about the control panel can be found on page 198

CYTO Cyto system available for this model. More information on page 178

MEDICAL DEVICE 93/42/EEC

ROTANTA 460

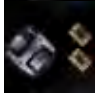
ROTANTA 460 R

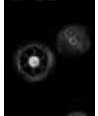
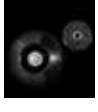
TECHNICAL DATA

	ROTANTA 460 non-refrigerated	ROTANTA 460 R refrigerated
voltage *)	220 – 240 V 1 ~	220 – 240 V 1 ~
frequency	50 – 60 Hz	50 Hz
consumption	1,000 VA	1,800 VA
emission, immunity	EN/IEC 61326-1, class B	EN/IEC 61326-1, class B
max. capacity	4 x 1,000 ml	4 x 1,000 ml
max. RPM	15,000 min^{-1}	15,000 min^{-1}
max. RCF	24,400	24,400
running time	1 – 99 h: 59 min: 59 s, ∞ continuous run, short cycle mode	1 – 99 h: 59 min: 59 s, ∞ continuous run, short cycle mode
dimensions (W x D x H)	554 x 706 x 456 mm	770 x 706 x 456 mm
weight	approx. 101 kg	approx. 141 kg
noise level	46 dB (A) with rotor 4474	58 dB (A) with rotor 4474
temperature control, infinitely variable	-	from -20 to +40 °C
Cat. No.	**5650**	**5660**
100 – 127 V 1 ~ / 60 Hz *)	5650-01	5660-01
consumption	1,100 VA	2,000 VA
emission, immunity	FCC class B	FCC class B
weight	approx. 111 kg	approx. 151 kg

*) Other voltages on request.

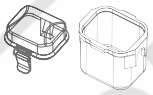
AVAILABLE ROTORS

SWING-OUT ROTORS		angle	max. RPM	max. capacity	Cat. No.	page
	swing-out rotor, 4-place	90°	4,600 min^{-1}	4 x 750 ml	**5699-R**	112
	swing-out rotor, 4-place	90°	3,800 min^{-1}	4 x 1,000 ml	**5654**	119
	swing-out rotor, 6-place	90°	4,000 min^{-1}	6 x 290 ml	**4446**	121
	swing-out rotor, 4-place	90°	2,000 min^{-1}	4 x 100 ml	**4474**	123
	swing-out rotor, 2-place	90°	5,900 min^{-1} / 6,200 min^{-1}	12 plates	**5622**	123

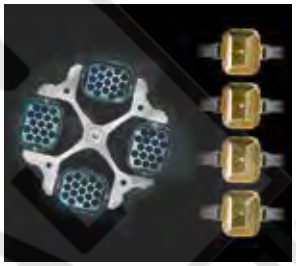
ANGLE ROTORS						
	angle rotor, 30-place	45°	15,000 min^{-1}	30 x 2 ml	**4489-A**	124
	angle rotor, 6-place	25°	8,500 min^{-1}/ 9,500 min^{-1}	6 x 250 ml	**5645**	124
	angle rotor, 6-place	35°	11,500 min^{-1}	6 x 94 ml	**5615**	125

SWING-OUT ROTOR, 4-PLACE | 5699-R

Rotor	
max. RPM I max. RCF [2]	4,600 min^{-1} I 5,063
max. capacity	4 x 250 ml
run-up I run-down, braked in sec	90 I 95
angle I temperature in °C [1]	90° I +10
Cat. No.	**5699-R**



Bucket	
lid bioseal [5]	5627
Cat. No.	**5625-A**



Vessels															
capacity in ml	1.5	2.0	3	4	4	5	6	7	15	25	50	94	100	100	250
Ø x L in mm	11 x 38	11 x 38	10 x 60	10 x 88	12 x 60	12 x 75	12 x 82	12 x 100	17 x 100	24 x 100	34 x 100	38 x 102	44 x 100	40 x 115	65 x 100
max. RCF [2]	3,572	4,637	4,637	4,637	4,637	4,637	4,637	4,637	4,637	4,637	4,495	4,495	4,637	4,495	4,495
radius in mm	151	196	196	196	196	196	196	196	196	196	190	190	196	190	190
Cat. No.	**microliter tubes**		**tubes [2]**												
Adapter															
boring Ø x L in mm	11 x 84	11 x 84	11 x 84	11 x 84	13.5 x 84	13.5 x 84	13.5 x 84	13.5 x 84	17.5 x 84	26.5 x 84	36 x 80	42 x 80	46 x 84	42 x 80	66 x 80
vessels per rotor	224	224	120	120	80	80	80	80	68	24	12	12	8	12	4
Cat. No.	**4730**	**4730**	**4730**	**4730**	**4732**	**4732**	**4732**	**4732**	**4733**	**4734**	**4735**	**4736**	**4737**	**4736**	**4738**

Vessels															
capacity in ml	1.1–1.4	2.6–3.4	2.7–3	4–5.5	4.5–5	4.9	7.5–8.5	9–10	10	1.6–5	4–7	4–7	8.5–10	14	15
Ø x L in mm	8 x 66	13 x 65	11 x 66	15 x 75	11 x 92	13 x 90	15 x 92	16 x 92	15 x 102	13 x 75	13 x 100	16 x 75	16 x 100	16.5 x 106	17 x 120
max. RCF [2]	4,637	4,637	4,637	4,637	4,637	4,637	4,637	4,637	4,637	4,637	4,637	4,637	4,637	4,637	4,637
radius in mm	196	196	196	196	196	196	196	196	196	196	196	196	196	196	196
Cat. No.	**blood collection / urine vessels**													**tubes with screw cap**	
Adapter															
boring Ø x L in mm	11 x 84	13.5 x 84	13.5 x 84	17.5 x 84	13.5 x 84	13.5 x 84	17.5 x 84	17.5 x 84	17.5 x 84	13.5 x 84	13.5 x 84	17.5 x 84	17.5 x 84	17 x 80	17 x 80
vessels per rotor	120	80	80	68	80	80	68	68	68	80	80	68	68	48	48
Cat. No.	**4730**	**4732**	**4732**	**4733**	**4732**	**4732**	**4733**	**4733**	**4733**	**4732**	**4732**	**4733**	**4733**	**4739 [4]**	**4739**

Vessels										
capacity in ml	50	12	25	30	50	10	30	50	85	94
Ø x L in mm	29 x 115	17 x 100	25 x 90	25 x 110	29 x 115	16 x 80	26 x 95	29 x 107	38 x 106	38 x 102
max. RCF [2]	4,637	4,637	4,637	4,637	4,637	4,637	4,637	4,637	4,637	4,495
radius in mm	196	196	196	196	196	196	196	196	196	190
Cat. No.	**tubes with screw cap**									
Adapter										
boring Ø x L in mm	30 x 80	17 x 80	26.5 x 84	26.5 x 84	30 x 80	17.5 x 84	26.5 x 84	30 x 80	42 x 80	42 x 80
vessels per rotor	20	48	24	24	20	68	24	20	12	12
Cat. No.	**4740**	**4739 [4]**	**4734**	**4734**	**4740**	**4733**	**4734**	**4740**	**4736**	**4736**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
4) Please remove the spacer.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.

SWING-OUT ROTOR, 4-PLACE | 5699-R

Rotor	
max. RPM I max. RCF [2]	4,600 min^{-1} I 4,779
max. capacity	4 x 750 ml
run-up I run-down, braked in sec	90 I 95
angle I temperature in °C [1]	90° I +7
Cat. No.	**5699-R**

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Bucket with clamp lock	
lid bioseal [5]	4883
Cat. No.	**4880**

Bucket without clamp lock [14]	
Cat. No.	**4885**

Vessels															
capacity in ml	1.5	2.0	3	4	4	5	6	7	15	25	45	50	94	100	100
Ø x L in mm	11 x 38	11 x 38	10 x 60	10 x 88	12 x 60	12 x 75	12 x 82	12 x 100	17 x 100	24 x 100	31 x 100	34 x 100	38 x 102	40 x 115	44 x 100
max. RCF [2]	3,572	4,637	4,637	4,637	4,637	4,637	4,637	4,637	4,637	4,637	4,495	4,495	4,495	4,495	4,637
radius in mm	151	196	196	196	196	196	196	196	196	196	190	190	190	190	196
Cat. No.	**microliter tubes**		**tubes [2]**												

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Adapter															
boring Ø x L in mm	11 x 84	11 x 84	11 x 84	11 x 84	13.5 x 84	13.5 x 84	13.5 x 84	13.5 x 84	17.5 x 84	26.5 x 84	36 x 80	36 x 80	42 x 80	42 x 80	46 x 84
vessels per rotor	192	192	96	96	76	76	76	76	76	28	16	16	12	12	8
Cat. No.	**4830**	**4830**	**4830**	**4830**	**4832**	**4832**	**4832**	**4832**	**4833**	**4834**	**4835**	**4835**	**4836**	**4836**	**4837**

Vessels															
capacity in ml	250	1.1 – 1.4	2.6 – 3.4	2.6 – 3.4	2.7 – 3	4 – 5.5	4.5 – 5	4.9	4.9	7.5 – 8.5	9 – 10	9 – 10	10	1.6 – 5	1.6 – 5
Ø x L in mm	65 x 100	8 x 66	13 x 65	13 x 65	11 x 66	15 x 75	11 x 92	13 x 90	13 x 90	15 x 92	16 x 92	16 x 92	13 x 90	13 x 75	13 x 75
max. RCF [2]	4,495	4,637	4,116	4,637	4,637	4,637	4,637	4,637	4,684	4,637	4,684	4,637	4,637	4,116	4,637
radius in mm	190	196	174	196	196	196	196	196	198	196	198	196	196	174	196
Cat. No.	**- [2]**	**blood collection / urine vessels**													

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Adapter															
boring Ø x L in mm	66 x 80	11 x 84	13.2 x 61	13.5 x 84	13.5 x 84	17.5 x 84	13.5 x 84	13.5 x 84	13.2 x 61	17.5 x 84	17.5 x 61	17.5 x 84	17.5 x 84	13.2 x 61	13.5 x 84
vessels per rotor	4	96	108	76	76	76	76	76	108	76	88	76	76	108	76
Cat. No.	**4838**	**4830**	**4847**	**4832**	**4832**	**4833**	**4832**	**4832**	**4847 [4]**	**4833**	**4848**	**4833**	**4833**	**4847**	**4832**

Vessels															
capacity in ml	4 – 7	4 – 7	4 – 7	4 – 7	8	8.5 – 10	8.5 – 10	5	14	15	50	50	12	25	30
Ø x L in mm	13 x 100	13 x 100	16 x 75	16 x 75	16 x 125	16 x 100	16 x 100	17 x 59	16.5 x 106	17 x 120	29 x 115	29 x 115	17 x 100	25 x 90	25 x 110
max. RCF [2]	4,684	4,637	4,637	4,684	4,637	4,637	4,684	4,637	4,637	4,637	4,708	4,637	4,637	4,566	4,566
radius in mm	198	196	196	198	196	196	198	196	196	196	199	196	196	193	193
Cat. No.	**blood collection / urine vessels**							**-**	**tubes with screw cap**						

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Adapter															
boring Ø x L in mm	13.2 x 61	13.5 x 84	17.5 x 84	17.5 x 61	17.5 x 84	17.5 x 84	17.5 x 61	17 x 80	17 x 80	17 x 80	30 x 96.5	30 x 80	17 x 80	26.5 x 84	26.5 x 84
vessels per rotor	108	76	76	88	76	76	88	56	56	56	28	20	56	28	28
Cat. No.	**4847 [4]**	**4832**	**4833**	**4848**	**4833**	**4833**	**4848**	**4839**	**4839 [4]**	**4839**	**5647**	**4840**	**4839 [4]**	**4834**	**4834**

SWING-OUT ROTOR, 4-PLACE | 5699-R

Rotor	
max. RPM I max. RCF	4,600 min^{-1} I 4,779
max. capacity	4 x 750 ml
run-up I run-down, braked in sec	90 I 95
angle	90°
temperature in °C [1]	+7
Cat. No.	**5699-R**

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Bucket with clamp lock	
lid bioseal [5]	4883
Cat. No.	**4880**

Bucket without clamp lock [14]	
Cat. No.	**4885**

Vessels															
capacity in ml	50	50	10	10	30	50	50	85	94	250	290	500	600	650	750
Ø x L in mm	29 x 115	29 x 115	16 x 80	16 x 80	26 x 95	29 x 107	29 x 107	38 x 106	38 x 102	61 x 122	62 x 137	96 x 147	93 x 134	97 x 139	97 x 152
max. RCF [2]	4,708	4,637	4,637	4,684	4,637	4,637	4,708	4,495	4,495	4,779	4,779	4,779	4,779	4,779	4,779
radius in mm	199	196	196	198	196	196	199	190	190	202	202	202	202	202	202
Cat. No.	tubes with screw cap									**5127** [24]	**-** [24]	**Corning®**	**0551** [24]	**0554** [24]	**0512** [24]

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Adapter															
boring Ø x L in mm	30 x 96.5	30 x 80	17.5 x 84	17.5 x 61	26.5 x 84	30 x 80	30 x 96.5	42 x 80	42 x 80	62 x 100	62 x 100	98 x 100	94 x 95	98 x 100	98 x 100
vessels per rotor	28	20	76	88	28	20	28	12	12	4	4	4	4	4	4
Cat. No.	**5647** [4]	**4840** [4]	**4833**	**4848**	**4834**	**4840** [4]	**5647** [4]	**4836**	**4836**	**4841**	**4841**	**4845**	**4846**	**4845**	**4845**

Vessels									
capacity in ml	450	750	30	50	40	160	200	200	200
Ø x L in mm	97 x 110	93 x 135	-	-	-	-	-	-	-
max. RCF [2]	4,779	4,779	4,613 [27]	4,613 [27]	4,613 [27]	4,613 [27]	4,613 [27]	4,613 [27]	4,613 [27]
radius in mm	202	202	195	195	195	195	195	195	195
Cat. No.	**4447**	**4234-A**	**Falcon®**	**Corning®**	**Nunc®**	**Nunc®**	**Falcon®**	**Greiner®**	**Nunc®**

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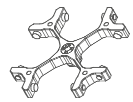
Adapter									
boring Ø x L in mm	98 x 100	98 x 100	-	-	-	-	-	-	-
vessels per rotor	4	4	8	8	4	8	4	4	4
Cat. No.	**4845**	**4845**	**4849**	**4849**	**4852**	**4851**	**4831**	**4831**	**4831**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3.8) When using these tubes, bucket 4880 cannot be closed with lid 4883.
3.9) When using these tubes, bucket 4890 cannot be closed with lid 4883.
4) Please remove the spacer.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
14) With the E3905 add-on kit and the 4783 lid, the 4785 carrier can be converted at a later time to a 4780 carrier with single-hand clamp lock.
21) Adapter must be loaded as illustrated.
24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.
27) RCF values indicated refer only to rotor performance. The max. RCF for the accommodated cell culture flasks is 2,300.
28) We recommend the use of the refrigerated ROTANTA 460 R, 460 RC, or 460 RF to ensure that the temperature of the blood is maintained during centrifugation.

SWING-OUT ROTOR, 4-PLACE | 5699-R



Rotor	
max. RPM I max. RCF [2]	4,600 min^{-1} I 5,063
max. capacity	4 x 750 ml
run-up I run-down, braked in sec	90 I 95
angle	90°
temperature in °C [1]	+7
Cat. No.	**5699-R**

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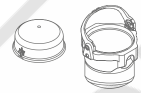
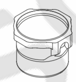
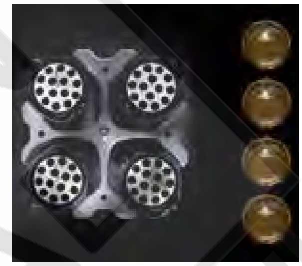
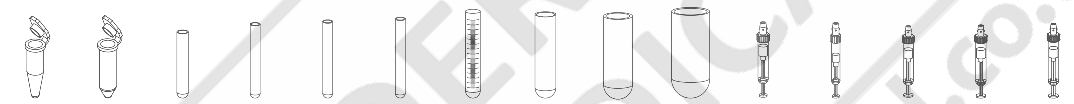


Bucket with clamp lock	
lid bioseal [5]	4883
Cat. No.	**4890**



Bucket without clamp lock [14]	
Cat. No.	**4895**





Vessels															
capacity in ml	1.5	2.0	5	7	8	9	15	25	50	100	2.6–3.4	2.7–3	4–5.5	4.5–5	4.9
Ø x L in mm	11 x 38	11 x 38	12 x 75	12 x 100	16 x 81	14 x 100	17 x 100	24 x 100	34 x 100	44 x 100	13 x 65	11 x 66	15 x 75	11 x 92	13 x 90
max. RCF [2] top / bottom	3,407 / 4,542	3,407 / 4,542	4,471	4,471	4,637	4,637	4,637	4,353	4,424	4,400	4,471	4,471	4,637	4,471	4,471
radius in mm top / bottom	144 / 192	144 / 192	189	189	196	196	196	184	187	186	189	189	196	189	189
Cat. No.	microliter tubes		tubes [2]								blood collection / urine vessels				

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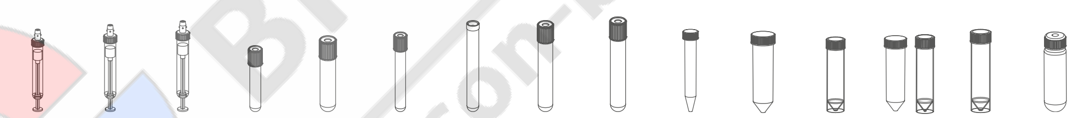
Adapter								+ 0726							
boring Ø x L in mm	11.5 x 38	11.5 x 38	13 x 58	13 x 58	17.5 x 53	17.5 x 53	17.5 x 53	26 x 72	36 x 79	45 x 78	13.5 x 58	13 x 58	17.5 x 53	13 x 58	13.5 x 58
vessels per rotor	168	168	120	120	76	76	76	28	16	8	84	120	76	120	84
Cat. No.	**4432**	**4432**	**4433**	**4433**	**4434**	**4434**	**4434**	**4438**	**4439**	**4442**	**4435**	**4433**	**4434**	**4433**	**4435**



Vessels															
capacity in ml	7.5–8.5	9 – 10	10	1.6 – 5	4 – 7	4 – 7	8	8.5 – 10	10	15	50	25	30	50	50
Ø x L in mm	15 x 92	16 x 92	15 x 102	13 x 75	13 x 100	16 x 75	16 x 125	16 x 100	16 x 80	17 x 120	29 x 115	25 x 90	25 x 110	29 x 115	29 x 107
max. RCF [2]	4,637	4,637	4,637	4,471	4,471	4,637	4,637	4,637	4,637	4,755	4,613	4,566	4,566	4,613	4,613
radius in mm	196	196	196	189	189	196	196	196	196	201	195	193	193	195	195
Cat. No.	blood collection / urine vessels									tubes with screw cap					

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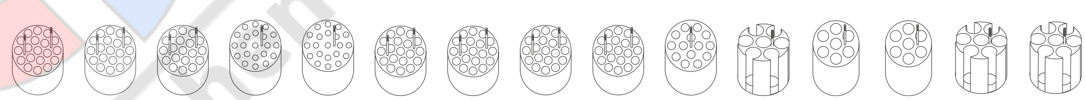
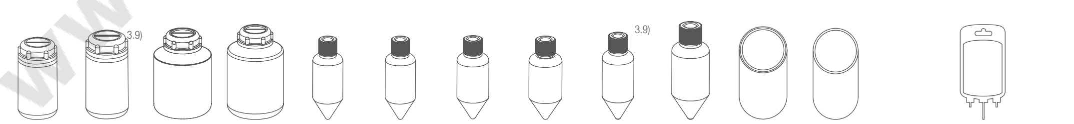


Adapter															
boring Ø x L in mm	17.5 x 53	17.5 x 53	17.5 x 53	13.5 x 58	13.5 x 58	17.5 x 53	17.5 x 53	17.5 x 53	17.5 x 53	17 x 93.1	31 x 96	26 x 72	26 x 72	31 x 96	31 x 96
vessels per rotor	76	76	76	84	84	76	76	76	76	56	28	28	28	28	28
Cat. No.	**4434**	**4434**	**4434**	**4435**	**4435**	**4434**	**4434**	**4434**	**4434**	**4469**	**4468**	**4438**	**4438**	**4468 [4]**	**4468**



Vessels													
capacity in ml	250	290 [3.9]	650	750	175	175	200	225	250 [3.9]	500	450	750	450
Ø x L in mm	61 x 122	62 x 137	97 x 139	97 x 152	61 x 118	62 x 144	60 x 130	61 x 137	60 x 162	96 x 147	97 x 110	93 x 135	3-place-system without filter
max. RCF [2]	4,873	4,873	4,873	4,873	5,063	5,063	5,063	5,063	5,063	5,063	5,063	5,063	5,063
radius in mm	206	206	206	206	214	214	214	214	214	214	214	214	214
Cat. No.	**5127 [24]**	**- [24]**	**0554 [24]**	**0512 [24]**	**Falcon®**	**Nalgene®**	**Nunc®**	**Falcon®**	**Corning®**	**Corning®**	**4447**	**4234-A**	**blood bags [28]**

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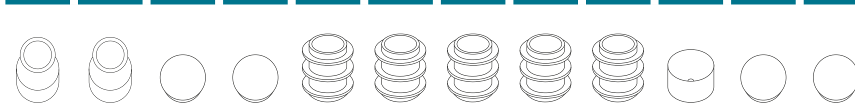

Adapter													
boring Ø x L in mm	62 x 92	62 x 92	98.4 x 116	98.4 x 116	-	-	-	-	-	-	98.4 x 116	98.4 x 116	-
vessels per rotor	4	4	4	4	4	4	4	4	4	4	4	4	4
Cat. No.	**4443**	**4443**	**4451**	**4451**	**4440**	**4430**	**4430**	**4440**	**4430**	**4449**	**4451**	**4451**	**-**

SWING-OUT ROTOR, 4-PLACE | 5699-R

Rotor	
max. RPM I max. RCF [2]	4,600 min^{-1} I 4,637
max. capacity	4 x 450 ml
run-up I run-down, braked in sec	90 I 95
angle I temperature in °C [1]	90° I +10
Cat. No.	**5699-R**

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Bucket

Cat. No.	**5691-A**

Blood bags	holder for systems without filter 	holder for systems with and without filter 
capacity in ml	450	450
blood bag	3-place-System	4-place-System
max. RCF [2]	4,637	4,637
radius in mm	196	196
Cat. No.	**5693**	**5695**

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Insert		
boring Ø x L in mm	-	-
blood bags per rotor	4	4
Cat. No.	**5692**	**5692**

SWING-OUT ROTOR, 4-PLACE | 5699-R

Rotor	
max. RPM I max. RCF [2]	4,600 min^{-1} I 4,921
max. capacity	12 Arrays
run-up I run-down, braked in sec	90 I 95
angle I temperature in °C [1]	90° I +10
Cat. No.	**5699-R**

+

Bucket

Cat. No.	**5636**

Array	TaqMan Array 
capacity in ml	-
W x D x H in mm	152.5x85.5x12
max. RCF [2]	4.921
radius in mm	208
Cat. No.	**-**

+

Adapter	
boring Ø x L in mm	-
arrays per rotor	12
Cat. No.	**5648**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers.
The max. RCF for glass tubes annotated with footnote 2) is 4,000.

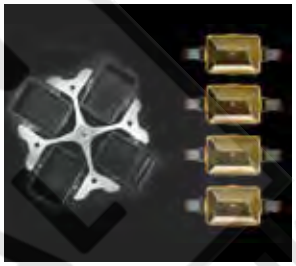
SWING-OUT ROTOR, 4-PLACE | 5699-R

Rotor	
max. RPM I max. RCF [2]	4,600 min^{-1} I 4,258
max. capacity	4 x 250 ml
run-up I run-down, braked in sec	90 I 95
angle I temperature in °C [1]	90° I +10
Cat. No.	**5699-R**

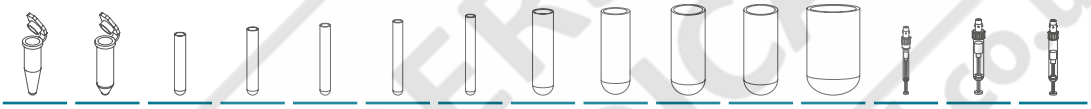
+

Bucket	
Cat. No.	**5628** [9]

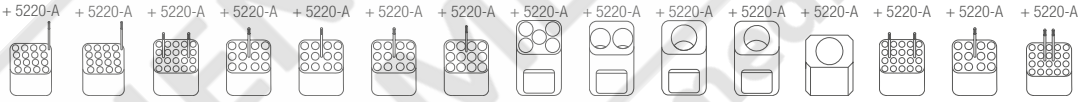
Adapter	
Cat. No.	**5220-A**



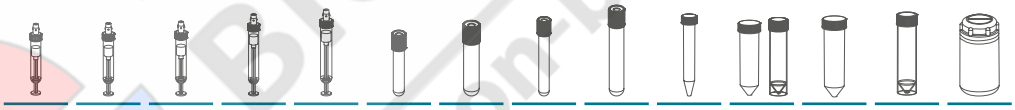
ROTANTA 460 | 460 R



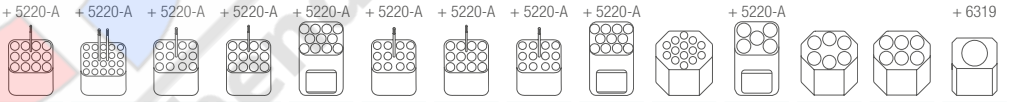
Vessels															
capacity in ml	1.5	2.0	3	5	6	7	9	25	50	100	100	250	1.1–1.4	2.6–3.4	2.7–3
Ø x L in mm	11 x 38	11 x 38	10 x 60	12 x 75	12 x 82	12 x 100	14 x 100	24 x 100	34 x 100	44 x 100	44 x 115	65 x 115	8 x 66	13 x 65	11 x 66
max. RCF [2]	4,164	4,164	4,069	4,164	4,164	4,164	4,116	4,093	4,093	4,069	4,069	4,045	4,069	4,164	4,116
radius in mm	176	176	172	176	176	176	174	173	173	172	172	171	172	176	174
Cat. No.	**microliter tubes**		**tubes** [2]										**blood collection / urine vessels**		



Adapter															
	+ 5220-A	+ 5220-A	+ 5220-A	+ 5220-A	+ 5220-A	+ 5220-A	+ 5220-A	+ 5220-A	+ 5220-A	+ 5220-A	+ 5220-A	+ 5220-A	+ 5220-A	+ 5220-A	+ 5220-A
boring Ø x L in mm	11.5 x 50	11.5 x 50	11 x 44	13.5 x 52	13.5 x 52	13.5 x 52	16 x 50	26 x 86	36 x 86	45.5 x 86	42 x 86	66 x 87	11 x 44	13.5 x 52	12.5 x 42
vessels per rotor	128	128	160	96	96	96	96	40	16	8	8	4	160	96	160
Cat. No. [19]	**5281**	**5281**	**5267**	**5268**	**5268**	**5268**	**5264**	**5242**	**5243**	**5262**	**5249**	**5263-A**	**5267**	**5268**	**5227**



Vessels														
capacity in ml	4–5.5	4.5–5	4.9	7.5–8.5	9 – 10	1.6 – 5	4 – 7	4 – 7	8.5 – 10	15	30	50	50	250
Ø x L in mm	15 x 75	11 x 92	13 x 90	15 x 92	16 x 92	13 x 75	16 x 75	13 x 100	16 x 100	17 x 120	25 x 110	29 x 115	29 x 115	61 x 122
max. RCF [2]	4,116	4,116	4,164	4,116	4,093	4,164	4,116	4,164	4,093	4,258	4,187	4,258	4,187	3,196
radius in mm	174	174	176	174	173	176	174	176	173	180	177	180	177	177
Cat. No.	**blood collection / urine vessels**									**tubes with screw cap**				**5127** [24]



Adapter														
	+ 5220-A	+ 5220-A	+ 5220-A	+ 5220-A	+ 5220-A	+ 5220-A	+ 5220-A	+ 5220-A	+ 5220-A		+ 5220-A			+ 6319
boring Ø x L in mm	16 x 50	12.5 x 42	13.5 x 52	16 x 50	17.6 x 86	13.5 x 52	16 x 50	13.5 x 52	17.7 x 86	17 x 90	26 x 86	30 x 90	30 x 87	66 x 87
vessels per rotor	96	160	96	96	88	96	96	96	88	56	40	24	24	4
Cat. No. [19]	**5264**	**5227**	**5268**	**5264**	**5258**	**5268**	**5264**	**5268**	**5258**	**6337-B**	**5266** [4]	**6338-B**	**6339-A**	**5263-A** [4]

Vessels	
capacity in ml	1 – 8
Ø x L in mm	simple / multiple
max. RCF [2]	2,744 / 4,069
radius in mm	116 / 172
Cat. No.	**cyto chambers**

+

Adapter	
boring Ø x L in mm	-
vessels per rotor	16
Cat. No. [19]	**5280**

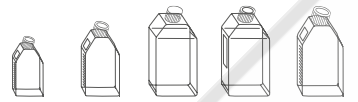
CYTO Cyto system available for this model.
More information on page 178

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers.
The max. RCF for glass tubes annotated with footnote 2) is 4,000.
4) Please remove the spacer.
9) Max. permissible loading weight of carrier 5628: 800 g. The loading weight is the sum of the weight of the respective adapters, frames, the tubes and their contents.
19) Two adapters can be placed on each bucket.
24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

SWING-OUT ROTOR, 4-PLACE | 5699-R

Rotor	
max. RPM I max. RCF	4,600 min^{-1} I 3,785
max. capacity	4 x 200 ml
run-up I run-down, braked in sec	90 I 95
angle I temperature in °C [1]	90° I +10
Cat. No.	**5699-R**

Bucket	
Cat. No.	**5630-B**



Vessels					
capacity in ml	40	160	200	200	200
Ø x L in mm	-	-	-	-	-
max. RCF [2]	3,785 [27]	3,785 [27]	3,785 [27]	3,785 [27]	3,785 [27]
radius in mm	160	160	160	160	160
Cat. No.	**Nunc®**	**Nunc®**	**Falcon®**	**Greiner®**	**Nunc®**

Adapter					
boring Ø x L in mm	-	-	-	-	-
vessels per rotor	4	4	4	4	4
Cat. No.	**5672**	**5673**	**5671**	**5671**	**5671**

Accommodated cell culture flask:

40 ml
Nunc®, No. 156340 or 156367

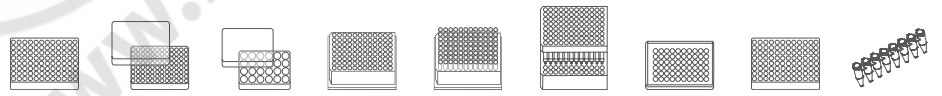
160 ml
Nunc®, No. 156472 or 156499
Sarstedt®, No. 83.3911.xxx

200ml
Becton Dickinson®, No. 353024
Greiner®, No. 658170
Nunc®, No. 153732 or 147589

SWING-OUT ROTOR, 4-PLACE | 5699-R

Rotor	
max. RPM I max. RCF	4,600 min^{-1} I 3,832
max. capacity	20 plates
run-up I run-down, braked in sec	90 I 95
angle I temperature in °C [1]	90° I +10
Cat. No.	**5699-R**

Bucket	
Cat. No.	**5630-B**

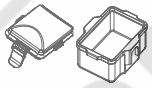


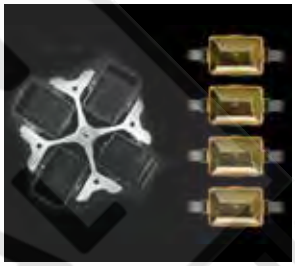
Plates									
W x D x H in mm	128x86x15	128x86x17.5	128x86x22	128x86x44.5	128x86x46	128x86x83	84x59x11	124x82x20	-
capacity in ml	-	-	-	-	-	-	-	-	0.2
max. RCF [2]	3,832	3,832	3,832	3,832	3,832	3,832	3,832	3,832	3,832
radius in mm	max. 162	max. 162	max. 162	max. 162	max. 162	max. 162	max. 162	max. 162	max. 162
Cat. No.	**MTP**	**MTP**	**CP**	**DWP**	**MS**	**QP**	**Microtest plate**	**PCR plate**	**PCR strips**

Removal frame									
boring Ø x L in mm	-	-	-	-	-	-	-	-	-
plates / strips per rotor	20	16	12	4	4	4	8	4	48 x 8
Cat. No.	**4626**	**4626**	**4626**	**4626**	**4626**	**4626**	**4626**	**4626 + 1485**	**4626 + 1485**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
27) RCF values indicated refer only to rotor performance. The max. RCF for the accommodated cell culture flasks is 2,300.

SWING-OUT ROTOR, 4-PLACE | 5699-R



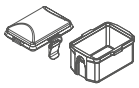


Rotor	
max. RPM I max. RCF	4,600 min^{-1} I 4,211
max. capacity	24 plates
run-up I run-down, braked in sec	90 I 95
angle I temperature in °C [1]	90° I +10
Cat. No.	**5699-R**

Bucket	
lid bioseal [5]	5629
Cat. No.	**5628 [9]**

Plates									
W x D x H in mm	128x86x15	128x86x17.5	128x86x22	128x86x44.5	128x86x46	128x86x83	84x59x11	124x82x20	-
capacity in ml	-	-	-	-	-	-	-	-	0.2
max. RCF [2]	4,211	4,211	4,211	4,211	4,211	4,211	4,211	4,211	4,211
radius in mm	max. 178	max. 178	max. 178	max. 178	max. 178	max. 178	max. 178	max. 178	max. 178
Cat. No.	**MTP**	**MTP**	**CP**	**DWP**	**MS**	**QP**	**Microtest plate**	**PCR plate**	**PCR strips**
Removal frame									
boring Ø x L in mm	-	-	-	-	-	-	-	-	-
plates / strips per rotor	24	20	16	4	4	4	8	4	48 x 8
Cat. No.	**4626**	**4626**	**4626**	**4626**	**4626**	**4626**	**4626**	**4626 + 1485**	**4626 + 1485**

SWING-OUT ROTOR, 4-PLACE | 5654



Rotor	
max. RPM I max. RCF	3,800 min^{-1} I 2,890
max. capacity	24 plates
run-up I run-down, braked in sec	61 I 57
angle I max. noise level	90° I 57 dB (A)
temperature in °C [1]	-4
Cat. No.	**5654**

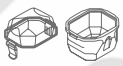
Bucket	
lid bioseal [5]	5629
Cat. No.	**5653**

Plates									
W x D x H in mm	128x86x15	128x86x17.5	128x86x22	128x86x44.5	128x86x46	128x86x83	84x59x11	124x82x20	-
capacity in ml	-	-	-	-	-	-	-	-	0.2
max. RCF [2]	2,890	2,890	2,890	2,890	2,890	2,890	2,890	2,890	2,890
radius in mm	max. 179	max. 179	max. 179	max. 179	max. 179	max. 179	max. 179	max. 179	max. 179
Cat. No.	**MTP**	**MTP**	**CP**	**DWP**	**MS**	**QP**	**Microtest plate**	**PCR plate**	**PCR strips**
Removal frame									
boring Ø x L in mm	-	-	-	-	-	-	-	-	-
plates / strips per rotor	24	20	16	4	4	4	8	4	48 x 8
Cat. No.	**4626**	**4626**	**4626**	**4626**	**4626**	**4626**	**4626**	**4626 + 1485**	**4626 + 1485**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
5) Tested by TÜV in conformity with DIN EN 61010, section 2 - 020.
27) RCF values indicated refer only to rotor performance. The max. RCF for the accommodated cell culture flasks is 2,300.

SWING-OUT ROTOR, 4-PLACE | 5654

Rotor	
max. RPM I max. RCF	3,800 min^{-1} I 3,196
max. capacity	4 x 1,000 ml
run-up I run-down, braked in sec	61 I 57
angle I max. noise level	90° I 58 dB (A)
temperature in °C [1]	+3
Cat. No.	**5654**



Bucket	
lid bioseal [5]	5652
Cat. No.	**5651-A**

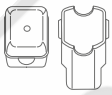
Vessels															
capacity in ml	3	4	4	5	6	7	10	10	15	1.1–1.4	2.6–3.4	2.7–3	4.5–5	4–5.5	4.9
Ø x L in mm	10 x 60	10 x 88	12 x 60	12 x 75	12 x 82	12 x 100	13 x 100	13 x 100	17 x 100	8 x 66	13 x 65	11 x 66	11 x 92	15 x 75	13 x 90
max. RCF [2]	2,874	2,874	2,874	2,874	2,874	2,874	2,906	2,906	2,970	2,874	2,906	2,874	2,874	2,970	2,906
radius in mm	178	178	178	178	178	178	180	180	184	178	180	178	178	184	180
Cat. No.	tubes [2]									blood collection / urine vessels					
Adapter															
boring Ø x L in mm	12.5 x 40	12.5 x 40	12.5 x 40	12.5 x 40	12.5 x 40	12.5 x 40	13.2 x 42.4	13.2 x 42.4	17.2 x 46.5	12.5 x 40	13.2 x 42.4	12.5 x 40	12.5 x 40	17.2 x 46.5	13.2 x 42.4
vessels per rotor	292	292	292	292	292	292	196	188	148	292	196	292	292	148	196
Cat. No.	**5684**	**5684**	**5684**	**5684**	**5684**	**5684**	**5674**	**5685**	**5682**	**5684**	**5674**	**5684**	**5684**	**5682**	**5674**

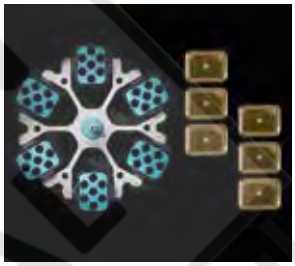
Vessels														
capacity in ml	7.5–8.5	9 – 10	10	1.6 – 5	4 – 7	4 – 7	4 – 7	8.5 – 10	10	5	15	50	175	175	200
Ø x L in mm	15 x 92	16 x 92	15 x 102	13 x 75	16 x 75	13 x 100	13 x 100	16 x 100	16 x 80	17 x 59	17 x 120	29 x 115	61 x 118	62 x 144	60 x 130
max. RCF [2]	2,970	2,970	2,970	2,906	2,970	2,906	2,906	2,970	2,970	3,196	3,196	3,196	3,196	3,196	3,196
radius in mm	184	184	184	180	184	180	180	184	184	198	198	198	198	198	198
Cat. No.	blood collection / urine vessels									-	tubes with screw cap		Falcon®	Nalgene®	Nunc®
Adapter													+ 5677	+ 5676	+ 5676
boring Ø x L in mm	17.2 x 46.5	17.2 x 46.5	17.2 x 46.5	13.2 x 42.4	17.2 x 46.5	13.2 x 42.4	13.2 x 42.4	17.2 x 46.5	17.2 x 46.5	17 x 42	17 x 60	30 x 60	62 x 100	62 x 100	62 x 100
vessels per rotor	148	148	148	196	148	196	188	148	148	80	96	40	8	8	8
Cat. No.	**5682**	**5682**	**5682**	**5674**	**5682**	**5674**	**5685**	**5682**	**5682**	**5688**	**5683**	**5686**	**5681**	**5681**	**5681**

Vessels									
capacity in ml	225	250	290	450	500	600	650	750	1,000
Ø x L in mm	61 x 137	61 x 122	62 x 137	97 x 110	96 x 147	93 x 134	97 x 139	97 x 152	99/126x140
max. RCF [2]	3,196	3,196	3,196	3,196	3,196	3,196	3,196	3,196	3,196
radius in mm	198	198	198	198	198	198	198	198	198
Cat. No.	Falcon®	5127 [24]	- [24]	4447	Corning®	0551 [24]	0554 [24]	0512 [24]	-
Adapter	+ 5677								
boring Ø x L in mm	62 x 100	62 x 100	62 x 100	98 x 100	98 x 100	98 x 100	98 x 100	98 x 100	100/127x68
vessels per rotor	8	8	8	4	4	4	4	4	4
Cat. No.	**5681**	**5681**	**5681**	**5687**	**5687**	**5687**	**5687**	**5687**	**5669**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3.10) When using this tubes, bucket 5651-A cannot be closed with lid 5652.
5) Tested by TÜV in conformity with DIN EN 61010, section 2 - 020.
24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

SWING-OUT ROTOR, 6-PLACE | 4446

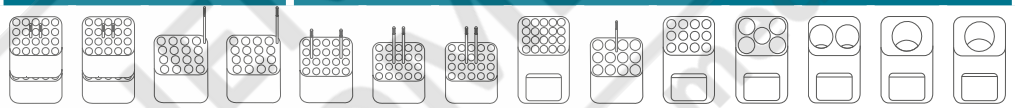




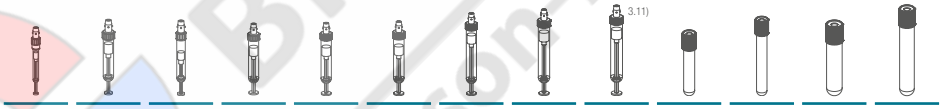
Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 3,631
max. capacity	6x100 ml
run-up I run-down, braked in sec	45 I 55
angle I max. noise level	90° I 58 dB (A)
temperature in °C [1]	-3
Cat. No.	**4446**

Bucket	
lid	5053
Cat. No.	**5051**

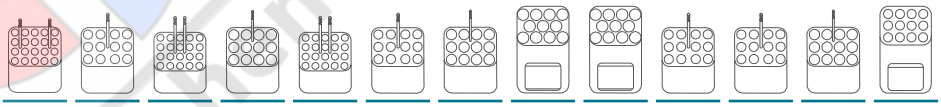
Vessels														
capacity in ml		1.5	2	1.5	2	3	5	6	7	9	15	25	50	100	100
Ø x L in mm		11x38	11x38	11x38	11x38	10x60	12x75	12x82	12x100	14x100	17x100	24x100	34x100	44x100	40x115
max. RCF [2]	top / bottom	2,486 / 3,363	2,486 / 3,363	3,363	3,363	3,274	3,309	3,309	3,291	3,309	3,291	3,291	3,291	3,291	3,291
radius in mm	top / bottom	139 / 188	139 / 188	188	188	183	185	185	184	185	184	184	184	184	184
Cat. No.		**microliter tubes**				**tubes [2]**									



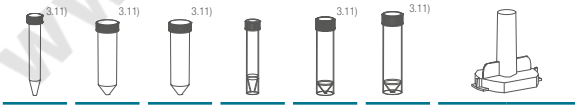
Adapter														
boring Ø x L in mm		12.5x42	12.5x42	11.5x50	11.5x50	11 x 44	12.5x42	12.5x42	12.5x86	16x50	17.5x86	26x86	36x86	45.5x86	42x86
vessels per rotor		240	240	96	96	120	120	120	120	72	72	30	12	6	6
Cat. No.		**5257**	**5257**	**5281**	**5281**	**5267**	**5227**	**5227**	**5247 [15]**	**5264**	**5248 [15]**	**5242**	**5243**	**5262**	**5249**



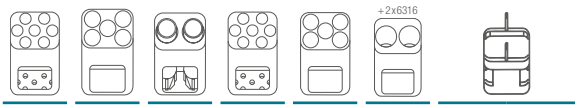
Vessels														
capacity in ml		1.1–1.4	2.6–3.4	2.7–3	4–5.5	4.5–5	4.9	7.5–8.5	9–10	10	1.6–5	4–7	4–7	8.5–10	
Ø x L in mm		8x66	13x65	11 x 66	15 x 75	11 x 92	13x90	15x92	16x92	15x102	13x75	13x100	16x75	16x100	
max. RCF [2]		3,274	3,345	3,309	3,309	3,309	3,345	3,309	3,291	3,291	3,345	3,345	3,309	3,291	
radius in mm		183	187	185	185	185	187	185	184	184	187	187	185	184	
Cat. No.		**blood collection / urine vessels**													



Adapter														
boring Ø x L in mm		11x44	13.5x52	12.5x42	16x50	12.5x42	13.5x52	16x50	17.6x86	17.6x86	13.5x52	13.5x52	16x50	17.5x86	
vessels per rotor		120	72	120	72	120	72	72	66	66	72	72	72	72	
Cat. No.		**5267**	**5268**	**5227**	**5264**	**5227**	**5268**	**5264**	**5258**	**5258**	**5268**	**5268**	**5264**	**5248**	



Vessels								
capacity in ml		15	30	50	12	30	50	1–8
Ø x L in mm		17x120	25x110	29x115	17x100	25x110	29x115	simple / multiple
max. RCF [2]	top / bottom	3,434	3,291	3,291	3,434	3,291	3,291	2,290 / 3,291
radius in mm	top / bottom	192	184	184	192	184	184	128 / 184
Cat. No.		**tubes with screw cap**						**cyto chambers**

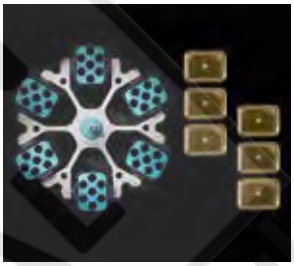


Adapter								
boring Ø x L in mm		17x90	26x86	30x86	17x90	26 x 86	36x86	-
vessels per rotor		42	30	12	42	30	12	12
Cat. No.		**6306**	**5266**	**5259**	**6306**	**5266**	**5243**	**5280**

CYTO Cyto system available for this model.
More information on page 178

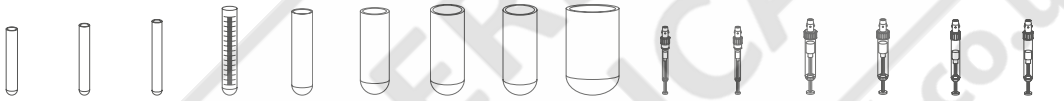
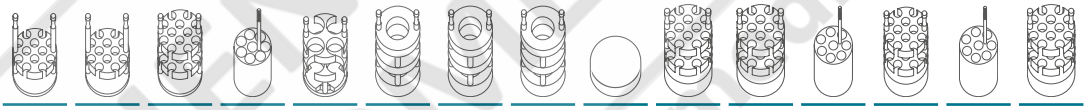
1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers.
The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3.11) When using these tubes, bucket 5051 cannot be closed with lid 5053.
15) With Cat. No. 5247-91 or 5248-91 these adapters can also be ordered with a decanting aid.

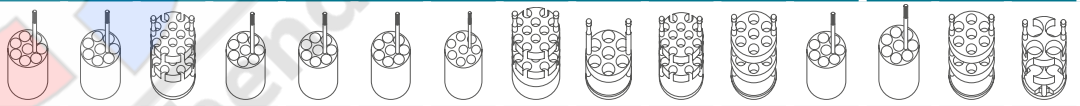
SWING-OUT ROTOR, 6-PLACE | 4446

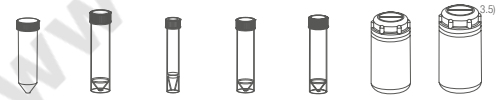
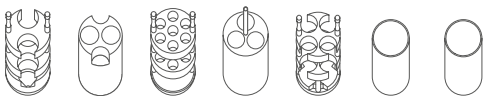


Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 3,631
max. capacity	6 x 290 ml
run-up I run-down, braked in sec	45 I 55
angle I temperature in °C [1]	90° I -3
Cat. No.	**4446**

Bucket	
lid bioseal [5]	5093
Cat. No.	**5092**

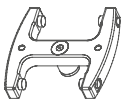
Vessels															
capacity in ml	5	6	7	15	25	50	100	100	250	1.1–1.4	1.1–1.4	2.6–3.4	2.6–3.4	2.7–3	2.7–3
Ø x L in mm	12x75	12x82	12x100	17x100	24x100	34x100	44x100	40x115	65x115	8 x 66	8 x 66	13 x 65	13 x 65	11x66	11x66
max. RCF [2]	3,542	3,542	3,542	3,488	3,434	3,488	3,488	3,488	3,631	3,488	3,077	3,488	3,077	3,488	3,077
radius in mm	198	198	198	195	192	195	195	195	203	195	172	195	172	195	172
Cat. No.	**tubes [2]**									**blood collection tubes / urine tubes**					
Adapter															
boring Ø x L in mm	12.8x45	12.8x45	13.2x82	17.5x60.7	25.5x82	35.5x82.5	45.5x85	42x85	66x103	13.5x60.7	13.2x54.5	13.5x60.7	13.2x54.5	13.5x60.7	13.2x54.5
vessels per rotor	72	72	72	48	24	6	6	6	6	48	72	48	72	48	72
Cat. No.	**5128**	**5128**	**5120**	**5136**	**5122**	**5124**	**5125**	**5126**	**1791**	**5137**	**5138**	**5137**	**5138**	**5137**	**5138**

Vessels															
capacity in ml	4.9	4–5.5	4.5–5	7.5–8.5	9 – 10	10	1.6 – 5	1.6 – 5	4 – 7	4 – 7	8	8.5 – 10	10	15	30
Ø x L in mm	13x90	15x75	11x92	15x92	16x92	15x102	13x75	13x75	16x75	13x100	16x125	16x100	16 x 80	17x120	25 x 110
max. RCF [2]	3,488	3,488	3,542	3,488	3,488	3,488	3,488	3,077	3,488	3,542	3,542	3,488	3,488	3,631	3,434
radius in mm	195	195	198	195	195	195	195	172	195	198	198	195	195	203	192
Cat. No.	**blood collection tubes / urine tubes**												**tubes with screw cap**		
Adapter															
boring Ø x L in mm	13.5x60.7	17.5x60.7	13.2x82	17.5x60.7	17.5x60.7	17.5x60.7	13.5x60.7	13.2x54.5	12.8x60.7	13.2x82	17.5x82	17.5x60.7	17.5x60.7	17x85	25.5x82
vessels per rotor	48	48	72	48	48	48	48	72	48	72	42	48	48	42	24
Cat. No.	**5137**	**5136**	**5120**	**5136**	**5136**	**5136**	**5137**	**5138**	**5136**	**5120**	**5121**	**5136**	**5136**	**5129**	**5122**

Vessels							
capacity in ml	50	50	12	25	30	250	290
Ø x L in mm	29x115	29x115	17x100	25x90	25x110	61 x 122	62 x 137
max. RCF [2]	3,631	3,560	3,542	3,363	3,434	3,631	3,631
radius in mm	203	199	198	188	192	203	203
Cat. No.	**tubes with screw cap**					**5127 [24]**	**- [24]**
Adapter							
boring Ø x L in mm	30x85	30x99	17.5x82	26x73	25.5x82	66x103	66x103
vessels per rotor	12	12	42	18	24	6	6
Cat. No.	**5123**	**5135**	**5121**	**5134**	**5122**	**6319**	**6319**

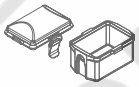
1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissibleRCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3.5) When using these tubes, bucket 5092 cannot be closed with lid 5053.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

SWING-OUT ROTOR, 2-PLACE | 5622



Rotor	
max. RPM ROTANTA 460 I 460 R	5,900 min^{-1} I 6,200 min^{-1}
max. RCF	5,838 I 6,446
max. capacity	12 plates
run-up I run-down, braked in sec	50 / 52 I 32 I 39
angle I temperature in °C [1]	90° I +10
Cat. No.	**5622**

+



Bucket	
lid bioseal [5]	4627
Cat. No.	**5631**

Plates									
W x D x H in mm	128x86x15	128x86x17.5	128x86x22	128x86x44.5	128x86x46	128x86x83	84x59x11	124x82x20	-
capacity in ml	-	-	-	-	-	-	-	-	0.2
max. RCF [2] ROTANTA 460 I 460 R	5,838 I 6,446	5,838 I 6,446	5,838 I 6,446	5,838 I 6,446	5,838 I 6,446	5,838 I 6,446	5,838 I 6,446	5,838 I 6,446	5,838 I 6,446
radius in mm	150	150	150	150	150	150	150	150	150
Cat. No.	**MTP**	**MTP**	**CP**	**DWP**	**MS**	**QP**	**Microtest plate**	**PCR plate 96 wells**	**PCR strips**

+

Removal frame									
boring Ø x L in mm	-	-	-	-	-	-	-	-	-
vessels per rotor	12	10	8	2	2	2	4	2	24 x 8
Cat. No.	**4626**	**4626**	**4626**	**4626**	**4626**	**4626**	**4626**	**4626 + 1485**	**4626 + 1485**

SWING-OUT ROTOR, 4-PLACE | 4474

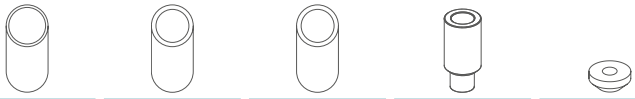
Rotor	
max. RPM I max. RCF	2,000 min^{-1} I 984
max. capacity	4 x 100 ml
run-up I run-down, braked in sec	17 I 20
angle I max. noise level	90° I 46 dB (A)
temperature in °C [1]	-8
Cat. No.	**4474**

+

Bucket	
Cat. No.	**4275**

Vessels					
capacity in ml	50	100	100	100	50
Ø x L in mm	45x130	58x161	44x168	37x200	36.5x185
max. RCF [2]	984	984	961	961	912
radius in mm	220	220	215	215	204
Cat. No.	**ASTM [2.1]**	**ASTM 0528 [2.1]**	**ASTM [2.1]**	**ASTM 0531 [2.1]**	**Babcock**

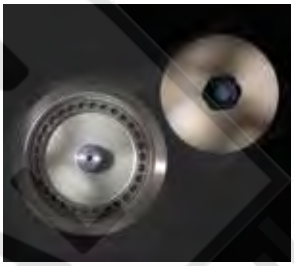
+



Adapter					
boring Ø x L in mm	-	-	-	-	-
vessels per rotor	4	4	4	4	4
Cat. No.	**4278-A**	**0771**	**4277**	**4276-B**	**0703-A**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2.1) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of vessels used should be verified with the individual manufacturers.The max. RCF for ASTM Tubes annotated with footnote 2) is 700.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.

ANGLE ROTOR, 30-PLACE | 4489-A



Rotor	
max. RPM I max. RCF	15,000 min^{-1} I 24,400
max. capacity	30 x 2 ml
run-up I run-down, braked in sec	73 I 77
angle I temperature in °C [1]	45° I +4
Cat. No.	**4489-A**

+ **Lid bioseal [5] and phenol-resistant** — **Cat. No.**: **INCLUSIVE**

Vessels							
capacity in ml	0.2	0.4	0.5	0.8	1.5	2	0.5
Ø x L in mm	6 x 18	6 x 45	8 x 30	8 x 45	11 x 38	11 x 38	10.7 x 36
max. RCF [2]	24,400	24,400	24,400	24,400	24,400	24,400	23,394
radius in mm	97	97	97	97	97	97	93
Cat. No.	**microliter tubes**						**Pediatric**

+ Adapter							
boring Ø x L in mm	6 x 40	6 x 40	8 x 40	8 x 40	10.2 x 19.3	11.2 x 40.1	11.2 x 40.1
vessels per rotor	30	30	30	30	30	30	15
Cat. No.	**2024**	**2024**	**2023**	**2023**	**2031 [7]**	**-**	**0788**

ANGLE ROTOR, 6-PLACE | 5645

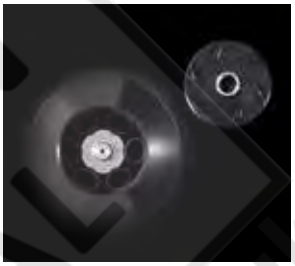
Rotor		
max. RPM	ROTANTA 460 I 460 R	8,500 min^{-1} I 9,500 min^{-1}
max. RCF		11,228 I 14,025
max. capacity		6 x 250 ml
run-up I run-down, braked in sec		98 / 115 I 105 / 120
angle I temperature in °C [1]		25° I +7
Cat. No.		**5645**

+ **Lid bioseal [5]** — **Cat. No.**: **INCLUSIVE**

Vessels											
capacity in ml	15	25	94	15	50	10	30	50	85	94	250
Ø x L in mm	17 x 100	24 x 100	38 x 102	17 x 120	29 x 115	16 x 80	26 x 95	29 x 107	38 x 106	38 x 102	61 x 122
max. RCF [2] ROTANTA 460	10,662	10,339	9,855	10,339	9,693	10,743	10,339	9,693	9,855	9,855	11,228
max. RCF [2] ROTANTA 460 R	13,319	12,915	12,310	12,915	12,108	13,420	12,915	12,108	12,310	12,310	14,025
radius in mm	132	128	122	128	120	133	128	120	122	122	139
Cat. No.	**tubes [2]**			**tubes with screw cap**							**5127 [24]**

+ Adapter											
boring Ø x L in mm	17.6 x 83	26 x 80	38.6 x 88	17 x 106	30 x 100	16.6 x 70	26 x 80	29 x 90	38.6 x 88	38.6 x 88	61.5 x 109
vessels per rotor	42	18	6	30	6	48	18	6	6	6	6
Cat. No.	**5646**	**5642**	**5644**	**5637**	**5638**	**5641**	**5642**	**5643**	**5644**	**5644**	**-**

ANGLE ROTOR, 6-PLACE | 5615



Rotor	
max. RPM I max. RCF	11,500 min^{-1} I 18,038
max. capacity	6 x 94 ml
run-up I run-down, braked in sec	66 I 68
angle I temperature in °C [1]	45° I +6
Cat. No.	**5615**

Lid bioseal [5]	
Cat. No.	**INCLUSIVE**

Vessels															
capacity in ml	0.5	1.5	2.0	3	15	25	50	94	7.5 – 8.5	9 – 10	10	8.5 – 10	5	15	50
Ø x L in mm	10.7 x 36	11 x 38	11 x 38	10 x 60	17 x 100	24 x 100	34 x 100	38 x 102	15 x 92	16 x 92	15 x 102	16 x 100	17 x 59	17 x 120	29 x 115
max. RCF [2]	17,299	17,299	17,299	17,299	17,003	16,560	17,743	18,038	17,003	17,003	17,003	17,003	16,856	17,299	17,595
radius in mm	117	117	117	117	115	112	120	122	115	115	115	115	114	117	119
Cat. No.	**Pediatric**	**microliter tubes**			**tubes [2]**				**blood collection / urine tubes**				**-**	**tubes with screw cap**	
Adapter															
boring Ø x L in mm	11.4x39	11.4x39	11.4x39	11.4 x 39	17.5x92	26 x 85	35 x 89	38.2x89.6	17.5 x 92	17.5 x 92	17.5 x 92	17.5 x 92	17 x 51	17 x 106	29.8 x 97
vessels per rotor	24	24	24	24	6	6	6	6	6	6	6	6	6	6	6
Cat. No.	**1449**	**1449**	**1449**	**1449**	**1451**	**1447**	**1463**	**-**	**1451**	**1451**	**1451**	**1451**	**1476**	**1466**	**1454**

Vessels					
capacity in ml	10	30	50	85	94
Ø x L in mm	16 x 80	26 x 95	29 x 107	38 x 106	38 x 102
max. RCF [2]	17,003	16,560	17,299	18,038	18,038
radius in mm	115	112	117	122	122
Cat. No.	**tubes with screw cap**				
Adapter					
boring Ø x L in mm	16.5 x 74	26 x 85	29 x 92	38.2 x 89.6	38.2 x 89.6
vessels per rotor	12	6	6	6	6
Cat. No.	**1448**	**1447**	**1446**	**-**	**-**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissibleRCF of tubes used should be verified with the individual manufacturers.
The max. RCF for glass tubes annotated with footnote 2) is 4,000.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
7) For centrifugation at high speeds, we recommend to use form-fitting, phenol-resistant adapters. Cat. No. 2031.
24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

PACKAGES ROTANTA 460 | 460 R

ROTANTA 460 CONICAL PACKAGE 1		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x ROTANTA 460 centrifuge	5650	56	15	17 x 120	4,600	4,637
- 1 x swing-out rotor, 4-place	5654	28	50	29 x 115	4,600	4,708
- 4 x bucket	5651-A					
- 4 x adapter, 24-place (conical)	5683					
- 4 x adapter, 10-place (conical)	5686					
5650SET1						

ROTANTA 460 CONICAL PACKAGE 2		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x ROTANTA 460 centrifuge	5650	56	15	17 x 120	4,600	4,637
- 1 x swing-out rotor, 4-place	5699-R	28	50	29 x 115	4,600	4,708
- 4 x bucket	4885					
- 4 x adapter, 14-place (conical)	4839					
- 4 x adapter, 7-place (conical)	5647					
5650SET2						

ROTANTA 460 R CONICAL PACKAGE 1		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x ROTANTA 460 R centrifuge	5660	56	15	17 x 120	4,600	4,755
- 1 x swing-out rotor, 4-place	5699-R	28	50	29 x 115	4,600	4,613
- 4 x bucket	4890					
- 4 x lid (bioseal)	4883					
- 4 x adapter, 7-place (conical)	4468					
- 4 x adapter, 14-place (conical)	4469					
5660SET1						

ROTANTA 460 R CONICAL PACKAGE 2		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x ROTANTA 460 R centrifuge	5660	56	15	17 x 120	4,600	4,637
- 1 x swing-out rotor, 4-place	5654	28	50	29 x 115	4,600	4,708
- 4 x bucket	5651-A					
- 4 x adapter, 24-place (conical)	5683					
- 4 x adapter, 10-place (conical)	5686					
5660SET2						

ROTANTA 460 R CONICAL PACKAGE 3		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x ROTANTA 460 R centrifuge	5660	56	15	17 x 120	4,600	4,637
- 1 x swing-out rotor, 4-place	5699-R	28	50	29 x 115	4,600	4,708
- 4 x bucket	4885					
- 4 x adapter, 14-place (conical)	4839					
- 4 x adapter, 7-place (conical)	5647					
5660SET3						

ROTANTA 460 R BLOOD TUBES PACKAGE 4		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x ROTANTA 460 R centrifuge	5660	188	4-10	13 x 100	3,800	2,906
- 1 x swing-out rotor, 4-place	5654	148	4.5-15	17 x 100	3,800	2,970
- 4 x bucket	5651-A					
- 4 x lid (bioseal)	5652					
- 4 x adapter, 47-place	5685					
- 4 x adapter, 37-place	5682					
5660SET4						

ROTANTA 460 R BLOOD TUBES PACKAGE 5		number of vessels	volume (ml)	size (mm)	RPM	RCF
- 1 x ROTANTA 460 R centrifuge	5660	108	2.6 -7	13 x 100	4,600	4,684
- 1 x swing-out rotor, 4-place	5699-R	88	4 - 10	16 x 100	4,600	4,684
- 4 x bucket	4880					
- 4 x lid (bioseal)	4883					
- 4 x adapter, 27-place	4847					
- 4 x adapter, 22-place	4848					
5660SET5						

PACKAGES ROTANTA 460 RF

ROTANTA 460 RF CONICAL PACKAGE 1

- 1 x ROTANTA 460 RF centrifuge 5675
- 1 x swing-out rotor, 4-place 5654
- 4 x bucket 5651-A
- 4 x adapter, 24-place (conical) 5683
- 4 x adapter, 10-place (conical) 5686

5675SET1

number of vessels	volume (ml)	size (mm)	RPM	RCF
56	15	17 x 120	4,600	4,637
28	50	29 x 115	4,600	4,708

ROTANTA 460 RF CONICAL PACKAGE 2

- 1 x ROTANTA 460 RF centrifuge 5675
- 1 x swing-out rotor, 4-place 5699-R
- 4 x bucket 4885
- 4 x adapter, 14-place (conical) 4839
- 4 x adapter, 7-place (conical) 5647

5675SET2

number of vessels	volume (ml)	size (mm)	RPM	RCF
56	15	17 x 120	4,600	4,637
28	50	29 x 115	4,600	4,708

ROTANTA 460 RF BLOOD TUBE PACKAGE 3

- 1 x ROTANTA 460 RF centrifuge 5675
- 1 x swing-out rotor, 4-place 5654
- 4 x bucket 5651-A
- 4 x lid (bioseal) 5652
- 4 x adapter, 47-place 5685
- 4 x adapter, 37-place 5682

5675SET3

number of vessels	volume (ml)	size (mm)	RPM	RCF
188	4-10	13 x 100	3,800	2,906
148	4.5-15	17 x 100	3,800	2,970

ROTANTA 460 RF BLOOD TUBE PACKAGE 4

- 1 x ROTANTA 460 RF centrifuge 5675
- 1 x swing-out rotor, 4-place 5699-R
- 4 x bucket 4880
- 4 x lid (bioseal) 4883
- 4 x adapter, 27-place 4847
- 4 x adapter, 22-place 4848

5675SET4

number of vessels	volume (ml)	size (mm)	RPM	RCF
108	2.6 -7	13 x 100	4,600	4,684
88	4 - 10	16 x 100	4,600	4,684

ROTOFIX 46 | 46 H

Robust industrial unit

These are ideal centrifuges for research and industrial laboratories. They are robust and can withstand intensive usage, in the field. Specialty buckets are able to hold ASTM pear-shaped and conical tubes for petroleum testing. Heated option provides chamber temperature up to +90 °C (ROTOFIX 46 H).

FEATURES

- Max. RPM: 4,000 min^{-1} | 2.000 min^{-1} – adjustable in increments of 10
- Max. RCF: 3,095 | 984
- Max. capacity: 4 x 290 ml | 4 x 100 ml
- Robust and versatile benchtop centrifuge
- Choice of 4 rotors
- Maximum noise level of ≤ 58 dB(A)
- Impulse button for short centrifugation
- Easy operation with keypad
- Model 46 H heatable from +10 to +90 °C

FIELDS OF APPLICATION

- Petrochemical laboratories
- Automobile industry
- Chemical laboratories

More information about the control panel can be found on page 198

INDUSTRIAL DEVICE
CE

TECHNICAL DATA

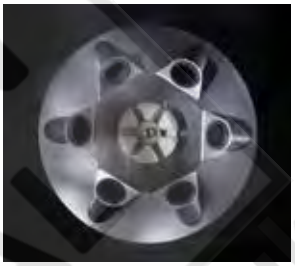
	ROTOFIX 46 non-refrigerated	ROTOFIX 46 H heated
voltage *)	200 – 240 V 1 ~	200 – 240 V 1 ~
frequency	50 – 60 Hz	50 – 60 Hz
consumption	460 VA	600 VA
emission, immunity	EN/IEC 61326-1, class B	EN/IEC 61326-1, class B
max. capacity	4 x 290 ml	4 x 100 ml
max. RPM	4,000 min^{-1}	2,000 min^{-1}
max. RCF	3,095	984
running time	1 – 99 min : 59 sec, ∞ continuous run, short cycle mode (impulse button)	1 – 99 min : 59 sec, ∞ continuous run, short cycle mode (impulse button)
dimesions (W x D x H)	538 x 647 x 345 mm	538 x 647 x 345 mm
weight	approx. 60 kg	approx. 60 kg
noise level	50 dB (A) with rotor 4619	38 dB (A) with rotor 4619
temperature setting, infinitely variable (dependent on the ambient temperature)	-	from +10 to +90 °C
Cat. No.	**4600**	**4600-50**
100 – 127 V 1 ~ / 50 – 60 Hz *)	4600-01	4600-51
consumption	500 VA	650 VA
emission, immunity	FCC class B	FCC class B

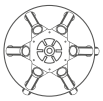
*) Other voltages on request.

AVAILABLE ROTORS

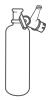
SWING-OUT ROTORS	angle	max. RPM	max. capacity	Cat. No.	page
 swing-out rotor, 6-place	90°	2,000 min^{-1}	6 x 30 ml	**4619**	130
swing-out rotor, 4-place	90°	2,000 min^{-1}	4 x 100 ml	**4474**	131
swing-out rotor, 4-place	90°	4,000 min^{-1}	4 x 290 ml	**5694**	131
ANGLE ROTOR					
 angle rotor, 6-place	45°	2,000 min^{-1}	6 x 50 ml	**5616**	130

ANGLE ROTOR, 6-PLACE | 5616





Rotor	
max. RPM I max. RCF	2,000 min^{-1} I 805
max. capactiy	6 x 50 ml
run-up I run-down, braked in sec	15 I 35
angle I max. noise level	45° I 38 dB (A)
Cat. No.	**5616** [30]

Tubes		
capacity in ml	25	50
Ø x L in mm	24x146.5	38x148.5
max. RCF [2.1]	783	805
radius in mm	175	180
Cat. No.	**0532**	**0533**

+

Adapter		
boring Ø x L in mm	25 x 86	38.5x89.9
tubes per rotor	6	6
Cat. No.	**4317**	**-**

SWING-OUT ROTOR, 6-PLACE | 4619

Rotor	
max. RPM I max. RCF	2,000 min^{-1} I 917
max. capactiy	6 x 30 ml
run-up I run-down, braked in sec	15 I 20
angle I max. noise level	90° I 38 dB (A)
Cat. No.	**4619** [30]


Tubes		
capacity in ml	30	30
Ø x L in mm	24 x 151	24 x 151
max. RCF [2.1]	917	917
radius in mm	206	206
Cat. No.	**0529**	**0508** [6]

+

Adapter		
boring Ø x L in mm	-	-
tubes per rotor	6	6
Cat. No.	**-**	**-**

2 Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

2.1) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of vessels used should be verified with the individual manufacturers.The max. RCF for ASTM Tubes annotated with footnote 2) is 700.

3.11) When using these tubes, bucket 5051 cannot be closed with lid 5053.

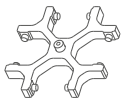
4) Please remove the spacer.

6) A rubber stopper for closing the tube for agitating or mixing is available under Cat. No. 0535. The tube may not be centrifuged with the stopper.

15) Also available with decanting aid. (Cat. No. 5247-91 or 5248-91).

30) In the heatable models 5660-50, 5660-51, 5660-70, 5670-50 and 5675-50, rotor 4619 may only be used up to a maximum of +40 °C.

SWING-OUT ROTOR, 4-PLACE | 4474



Rotor	
max. RPM I max. RCF	2,000 min^{-1} I 984
max. capactiy	4 x 100 ml
run-up I run-down, braked in sec	16 I 40
angle I max. noise level	90° I 58 dB (A)
Cat. No.	**4474**

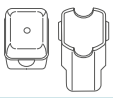
Bucket	
Cat. No.	**4275**

Tubes					
capacity in ml	50	100	100	100	50
Ø x L in mm	45 x 130	58 x 161	44 x 168	37 x 200	36.5 x 185
max. RCF [2.1)]	984	984	961	961	912
radius in mm	220	220	215	215	204
Cat. No.	**ASTM [2.1)]**	**0528 [2.1)]**	**ASTM [2.1)]**	**0531 [2.1)]**	**Babcock**

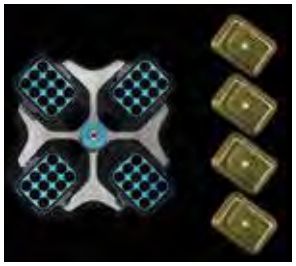
Adapter					
boring Ø x L in mm	-	-	-	-	-
tubes per rotor	4	4	4	4	4
Cat. No.	**4278-A**	**0771**	**4277**	**4276-B**	**0703-A**

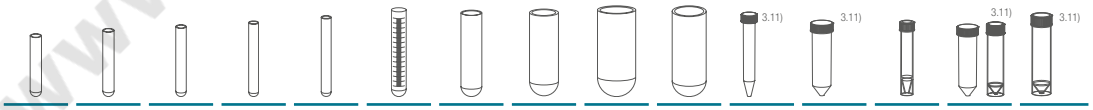
SWING-OUT ROTOR, 4-PLACE | 5694 (NOT FOR 46 H)

Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 3,095
max. capactiy	4 x 100 ml
run-up I run-down, braked in sec	40 I 45
angle I max. noise level	90° I 58 dB (A)
Cat. No.	**5694**

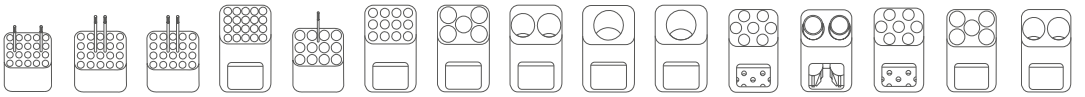


Bucket	
lid	5053
Cat. No.	**5051**



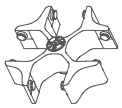


Tubes															
capacity in ml	3	5	6	7	9	15	25	50	100	100	15	50	12	30	50
Ø x L in mm	10 x 60	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	24 x 100	34 x 100	44 x 100	40 x 115	17 x 120	29 x 115	17 x 100	25 x 110	29 x 115
max. RCF [2)]	2,737	2,773	2,773	2,755	2,773	2,755	2,755	2,755	2,755	2,755	2,898	2,826	2,898	2,755	2,755
radius in mm	153	155	155	154	155	154	154	154	154	154	162	158	162	154	154
Cat. No.	**tubes [2)]**										**tubes with screw cap**				



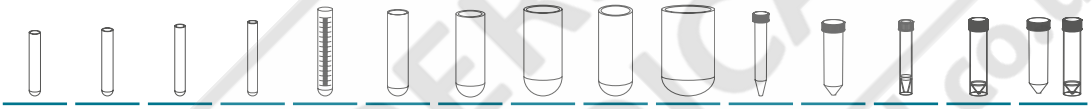
Adapter															
boring Ø x L in mm	11 x 44	12.5 x 42	12.5 x 42	12.5 x 86	16 x 50	17.5 x 86	26 x 86	36 x 86	45.5 x 86	42 x 86	17 x 90	30 x 86	17 x 90	26 x 86	36 x 86
tubes per rotor	80	80	80	80	48	48	20	8	4	4	28	8	28	20	8
Cat. No.	**5267**	**5227**	**5227**	**5247 [15)]**	**5264**	**5248 [15)]**	**5242**	**5243**	**5262**	**5249**	**6306**	**5259**	**6306**	**5266**	**5243 [4)]**

SWING-OUT ROTOR, 4-PLACE | 5694 (NOT FOR 46 H)

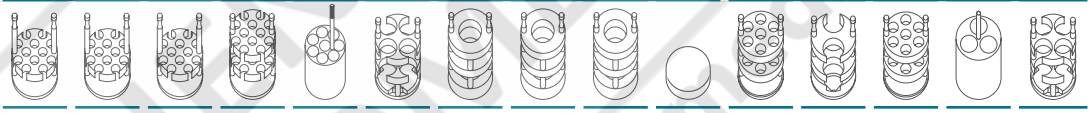


Rotor	
max. RPM I max. RCF [2]	4,000 min^{-1} I 3,095
max. capactiy	4 x 290 ml
run-up I run-down, braked in sec	40 I 45
angle I max. noise level	90° I 58 dB (A)
Cat. No.	**5694**

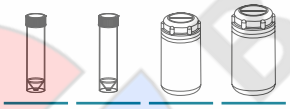
Bucket	
lid bioseal [5]	5093
Cat. No.	**5092**



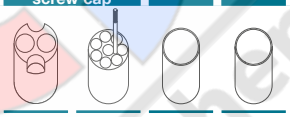
Tubes															
capacity in ml	4	5	6	7	15	25	50	100	100	250	15	50	12	25	30
Ø x L in mm	12 x 60	12 x 75	12 x 82	12 x 100	17 x 100	24 x 100	34 x 100	44 x 100	40 x 115	65 x 115	17 x 120	29 x 115	17 x 100	25 x 90	25 x 110
max. RCF [2]	3,005	3,005	3,005	3,005	2,952	2,898	2,952	2,952	2,952	3,095	3,095	3,095	3,005	2,826	2,898
radius in mm	168	168	168	168	165	162	165	165	165	173	173	173	168	158	162
Cat. No.	**tubes [2]**										**tubes with screw cap**				



Adapter															
boring Ø x L in mm	12.8 x 45	12.8 x 45	12.8 x 45	13.2 x 82	17.5 x 60.7	25.5 x 82	35.5 x 82.5	45.5 x 85	42 x 85	66 x 103	17 x 85	30 x 85	17.5 x 82	26 x 73	25.5 x 82
tubes per rotor	48	48	48	48	32	16	4	4	4	4	28	8	28	12	16
Cat. No.	**5128**	**5128**	**5128**	**5120**	**5136**	**5122**	**5124**	**5125**	**5126**	**1791**	**5129**	**5123**	**5121**	**5134**	**5122**



Tubes				
capacity in ml	50	10	250	290
Ø x L in mm	29 x 115	16 x 80	61 x 122	62 x 137
max. RCF [2]	3,023	2,952	3,095	3,095
radius in mm	169	165	173	173
Cat. No.	**tubes with screw cap**		**5127 [24]**	**- [24]**



Adapter				
boring Ø x L in mm	30 x 99	17.5 x 60.7	66 x 103	66 x 103
tubes per rotor	8	32	4	4
Cat. No.	**5135**	**5136**	**6319**	**6319**

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

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FLOORSTANDING CENTRIFUGES

High performance, throughput and capacity

ROTANTA 460 RC | 460 RF
on page 136

ROTIXA 500 RS
on page 138

ROTO SILENTA 630 RS
on page 150

04

FLOORSTANDING
CENTRIFUGES

ROTANTA 460 RC | 460 RF

The capability of a benchtop without the footprint

This modified version of the standard ROTANTA 460 allows for space saving storage below the bench and frees valuable working space on the benchtop. Both units include refrigeration with a temperature range from -20 °C to +40 °C.

FEATURES

- RPM: 50 - 15,000 min $^{-1}$ – adjustable in increments of 10
- RCF: 1 - 24,400 – adjustable in increments of 1
- Available in two versions as a floor-standing unit or under-bench model
- Max. capacity: 4 x 1,000 ml
- Choice of 8 rotors
- Medical Device according to directive 93/42/EC
- 28 individual acceleration and deceleration stages
- Easy operation with keypad and control knob
- 98 program memories for more individuality
- Refrigerated from -20 to +40 °C with pre-cooling function

FIELDS OF APPLICATION

- Hospitals
- Hematological laboratories
- Small blood centers
- Veterinary laboratories
- Pharmaceutical laboratories
- Food analyzing laboratories
- University / Academic research
- Oil laboratories
- Chemical industry
- Forensic laboratories

Centrifuge packages for the model can be found on page 127

CYTO Cyto system available for this model. More information on page 178

More information about the control panel can be found on page 198

MEDICAL DEVICE 93/42/EEC

ROTANTA 460 RC

ROTANTA 460 RF

TECHNICAL DATA

	ROTANTA 460 RC refrigerated	ROTANTA 460 RF refrigerated
voltage *)	200 – 240 V 1 ~	200 – 240 V 1 ~
frequency	50 Hz	50 Hz
consumption	1,800 VA	2,000 VA
emission, immunity	EN/IEC 61326-1, class B	EN/IEC 61326-1, class B
max. capacity	4 x 750 ml	4 x 750 ml
max. RPM	15,000 min^{-1}	15,000 min^{-1}
max. RCF	24,400	24,400
running time	1 – 99 h: 59 min: 59 s, ∞ continuous run, short cycle mode	1 – 99 h: 59 min: 59 s, ∞ continuous run, short cycle mode
dimensions (W x D x H)	554 x 697 x 683 mm	554 x 697 x 961 mm
weight	approx. 140 kg	approx. 164 kg
noise level	60 dB (A) with rotor 4474	60 dB (A) with rotor 4474
temperature control, infinitely variable	from -20 to +40 °C	from -20 to +40 °C
Cat. No.	**5670**	**5675**
100 – 127 V 1 ~ / 60 Hz *)	-	5675-01
emission, immunity	-	FCC class B
weight	-	approx. 174 kg

*) Other voltages on request.

AVAILABLE ROTORS (identical to the ROTANTA 460 | 460 R)

SWING-OUT ROTORS	angle	max. RPM	max. capacity	Cat. No.	page
 swing-out rotor, 4-place	90°	4,600 min^{-1}	4 x 750 ml	**5699-R**	112
 swing-out rotor, 4-place	90°	3,800 min^{-1}	4 x 750 ml	**5654**	119
 swing-out rotor, 6-place	90°	4,000 min^{-1}	6 x 290 ml	**4446**	121
 swing-out rotor, 4-place	90°	2,000 min^{-1}	4 x 100 ml	**4474**	123
 swing-out rotor, 2-place	90°	5,900 min^{-1} / 6,200 min^{-1}	12 plates	**5622**	123

ANGLE ROTORS					
 angle rotor, 30-place	45°	15,000 min^{-1}	30 x 2 ml	**4489-A**	124
 angle rotor, 6-place	25°	8,500 min^{-1}/ 9,500 min^{-1}	6 x 250 ml	**5645**	124
 angle rotor, 6-place	45°	11,500 min^{-1}	6 x 94 ml	**5615**	125

ROTIXA 500 RS

Small footprint – high volumes

Its durable components make the ROTIXA 500 RS a reliable unit with a long service life. High sample capacity and maximum RCF of 18,038 make it suitable for 4 x 450-1,000 ml blood bags. Specially designed buckets keep blood bags upright during centrifugation for improved separation of blood components.

In industrial research labs, it accomodates 4 bottles up to 1,000 ml, specialty racks, as well as container and vessels for various applications. This unit includes refigeration with a temperature range from -20°C to +40°C.

FEATURES

- RPM: 50 - 11,500 min^{-1} – adjustable in increments of 10
- RCF: 50 - 18,038 – adjustable in increments of 1
- Max. capacity: 4 x 1,000 ml
- Choice of 5 rotors
- Medical Device according to directive 93/42/EC
- Easy operation with keypad and control knob
- 89 program memories for more individuality
- 19 individual acceleration and deceleration stages

FIELDS OF APPLICATION

- Hospitals
- Hematology laboratories
- Blood centers
- Veterinary laboratories
- Clinical laboratories
- Environmental analyzing laboratories
- University / Academic research
- Automobile industry
- Chemical industry
- Dairy industry

Documentation system for blood banks.
More information on page 160

CYTO Cyto system available for this model.
More information on page 178

More information about the control panel
can be found on page 198

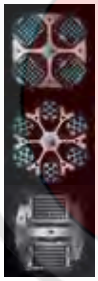
MEDICAL DEVICE 93/42/EEC

TECHNICAL DATA

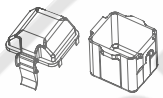
	ROTIXA 500 RS >) refrigerated	
voltage *)	230 – 240 V 1 ~	220 V 1 ~
frequency	50 Hz	60 Hz
consumption	3,800 VA	
emission, immunity	EN/IEC 61326-1, class B	
max. capacity	4 x 1,000 ml	
max. RPM	11,500 min^{-1}	
max. RCF	18,038	
running time	1 – 999 min: 59 s, ∞ continuous run	
dimensions (W x D x H)	650 x 814 x 973 mm	
weight	approx. 219 kg	
noise level	58 dB (A) with rotor 4282	
temperature control, infinitely variable	from -20 to +40 °C	
Cat. No.	**4950**	

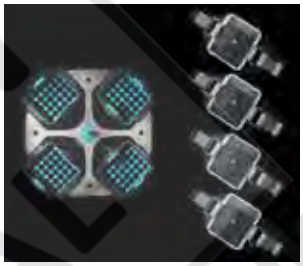
*) Other voltages on request.
>) Other models models on request.

AVAILABLE ROTORS

SWING-OUT ROTORS		angle	max. RPM	max. capacity	Cat. No.	page
	swing-out rotor, 4-place	90°	4,500 min^{-1}	4 x 1,000 ml	**4294**	140
	swing-out rotor, 6-place	90°	4,000 min^{-1}	6 x 250 ml	**4296**	145
	swing-out rotor, 2-place	90°	3,600 min^{-1}	20 plates	**4282**	147
ANGLE ROTORS						
	angle rotor, 6-place	25°	9,500 min^{-1}	6 x 250 ml	**4266**	148
	angle rotor, 6-place	45°	11,500 min^{-1}	6 x 94 ml	**4246**	149

SWING-OUT ROTOR, 4-PLACE | 4294

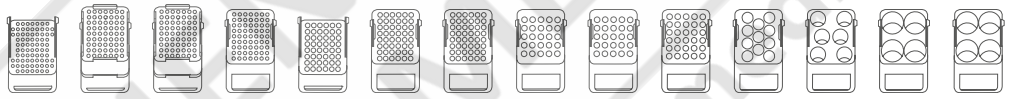




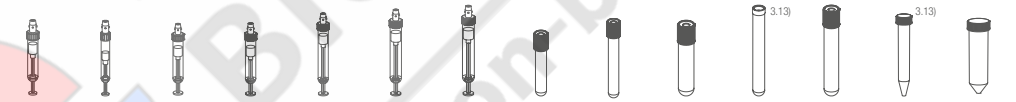
Rotor	
max. RPM I max. RCF [2]	4,500 min^{-1} I 4,958
max. capactiy	4 x 750 ml
run-up I run-down, braked in sec	115 I 116
angle I temperature in °C [1]	90° I +6
Cat. No.	**4294**

Bucket	
lid	4229-B
Cat. No.	**4295-A**

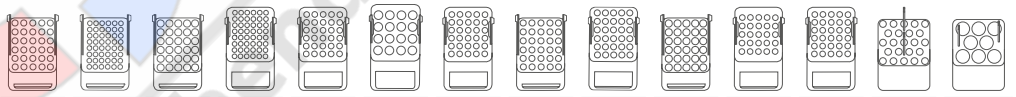
Tubes														
capacity in ml	0.8	1.5	2.0	4	5	6	7	9	12	15	25	50	94	100
Ø x L in mm	8 x 45	11 x 38	11 x 38	10 x 88	12 x 75	12 x 82	12 x 100	14 x 100	16 x 101	17 x 100	24 x 100	34 x 100	38 x 102	40 x 115
max. RCF [2]	4,777	3,690	4,867	4,777	4,777	4,777	4,777	4,777	4,777	4,777	4,777	4,777	4,777	4,777
radius in mm	211	163	215	211	211	211	211	211	211	211	211	211	211	211
Cat. No.	**microliter tubes**			**tubes [2]**										



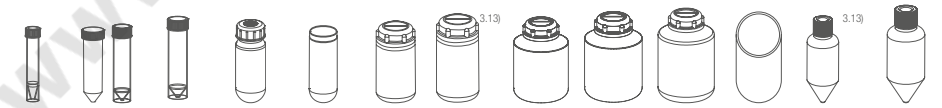
Adapter														
boring Ø x L in mm	8.2 x 36	11.2 x 46	11.2 x 46	11 x 74	12.5 x 36	12.5 x 74	12.5 x 74	16 x 74	16 x 74	17.5 x 74	26 x 74	35 x 74	41.5 x 74	41.5 x 74
tubes per rotor	312	336	336	252	192	192	192	100	100	120	44	24	16	16
Cat. No.	**4226**	**4225**	**4225**	**4224**	**4213-93**	**4213**	**4213**	**4223**	**4223**	**4214**	**4215**	**4216**	**4218**	**4218**



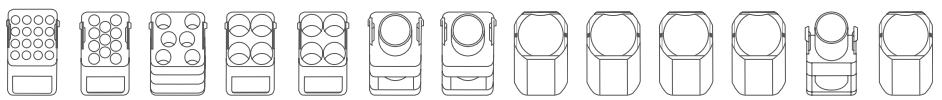
Tubes														
capacity in ml	2.6–3.4	2.7–3	4–5.5	4.5–5	7.5–8.5	9–10	10	1.6–5	4–7	4–7	8	8.5–10	15	50
Ø x L in mm	13 x 65	11 x 66	15 x 75	11 x 92	15 x 92	16 x 92	15 x 102	13 x 75	13 x 100	16 x 75	16 x 125	16 x 100	17 x 120	29 x 115
max. RCF [2]	4,777	4,777	4,777	4,777	4,777	4,777	4,777	4,777	4,777	4,777	4,777	4,777	4,958	4,958
radius in mm	211	211	211	211	211	211	211	211	211	211	211	211	219	219
Cat. No.	**blood collection / urine tubes**												**tubes with screw cap**	



Adapter														
boring Ø x L in mm	13.2 x 36	12.5 x 36	17.5 x 36	12.5 x 74	17.5 x 74	17.5 x 74	17.5 x 74	13.2 x 36	13.2 x 74	17.5 x 36	16 x 74	17.5 x 74	17 x 70	30 x 70
tubes per rotor	120	192	120	192	120	64	120	120	120	120	100	120	92	32
Cat. No.	**4222-93**	**4213-93**	**4214-93**	**4213**	**4214**	**4220**	**4214**	**4222-93**	**4222**	**4214-93**	**4223**	**4214**	**4232**	**4245-A**

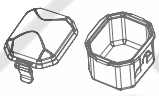


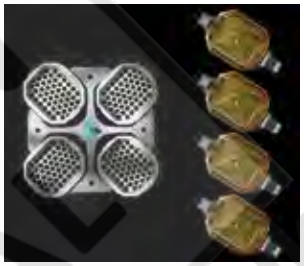
Tubes													
capacity in ml	12	30	50	100	100	250	290	600	650	750	750	250	500
Ø x L in mm	17 x 100	25 x 110	29 x 115	40 x 115	40 x 115	61 x 122	62 x 137	93 x 137	97 x 139	97 x 152	96 x 135	60 x 162	96 x 147
max. RCF [2]	4,777	4,777	4,867	4,777	4,777	4,777	4,777	4,958	4,958	4,958	4,958	4,777	4,958
radius in mm	211	211	215	211	211	211	211	219	219	219	219	211	219
Cat. No.	**tubes with screw cap**					**5127 [24]**	**– [24]**	**0551 [24]**	**0554 [24]**	**0512 [24]**	**4234-A**	**Corning®**	**Corning® +4449**



Adapter													
boring Ø x L in mm	17.5 x 74	26 x 74	30 x 96	41.5 x 74	41.5 x 74	62 x 90	62 x 90	94 x 105	97.5 x 105	97.5 x 105	97.5 x 105	61 x 125	97.5 x 105
tubes per rotor	64	44	24	16	16	4	4	4	4	4	4	4	4
Cat. No.	**4220**	**4215**	**4249**	**4218**	**4218**	**4238**	**4238**	**4233**	**4258**	**4258**	**4258**	**6322**	**4258**

SWING-OUT ROTOR, 4-PLACE | 4294





Rotor	
max. RPM I max. RCF [2]	4.500 min^{-1} I 4.618
max. capactiy	40 x 50 ml
run-up I run-down, braked in sec	115 I 116
angle	90°
temperature in °C [1]	+2
Cat. No.	**4294**

Bucket	
lid bioseal [5]	4291
Cat. No.	**4290**

Tubes															
capacity in ml	5	6	7	9	12	2.6–3.4	4.9	4–5.5	7.5–8.5	9–10	10	1.6–5	4–7	4–7	8.5–10
Ø x L in mm	12x75	12x82	12x100	14x100	16x101	13 x 65	13x90	15x75	15x92	16x92	15x102	13 x 75	13 x 100	16x75	16x100
max. RCF [2]	4,551	4,551	4,551	4,551	4,551	4,551	4,551	4,551	4,551	4,573	4,573	4,551	4,551	4,551	4,551
radius in mm	201	201	201	201	201	201	201	201	201	202	202	201	201	201	201
Cat. No.	**tubes [2]**					**blood collection / urine tubes**									

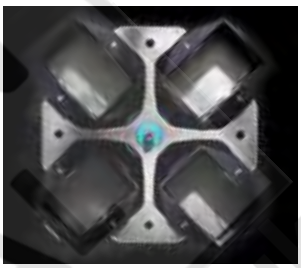
Adapter															
boring Ø x L in mm	13.2x57	13.2x57	13.2x57	17.5 x 62	17.5 x 62	13.2x57	13.2x57	17.5 x 62	17.5 x 62	17.5 x 63	17.5 x 63	13.2 x 57	13.2 x 57	17.5 x 62	17.5 x 62
tubes per rotor	200	200	200	168	168	200	200	168	168	132	132	200	200	168	168
Cat. No.	**4273**	**4273**	**4273**	**4338**	**4338**	**4273**	**4273**	**4338**	**4338**	**4311**	**4311**	**4273**	**4273**	**4338**	**4338**

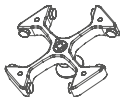
Tubes									
capacity in ml	15	10	12	15	15	50	50	50	50
Ø x L in mm	17x100	16x80	17x100	17x120	17x120	29x115	29x115	29x115	29x115
max. RCF [2]	4,551	4,551	4,437	4,618	4,618	4,618	4,618	4,528	4,528
radius in mm	201	201	196	204	204	204	204	200	200
Cat. No.	**- [2]**	**tubes with screw cap**							

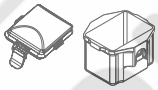
Adapter									
boring Ø x L in mm	17.5 x 62	17.5 x 62	17.2 x 57	17 x 60	17 x 60	30 x 60	30 x 60	30 x 56	30 x 56
tubes per rotor	168	168	112	68	112	32	40	32	40
Cat. No.	**4338**	**4338**	**4310**	**4314**	**4320** [3.12]	**4321**	**4323** [3.12]	**4313**	**4339** [3.12]

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3.12) When using these tubes, bucket 4290 cannot be closed with lid 4291.
3.13) When using these tubes, bucket 4295-A cannot be closed with lid 4229-B.
24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

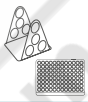
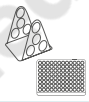
SWING-OUT ROTOR, 4-PLACE | 4294



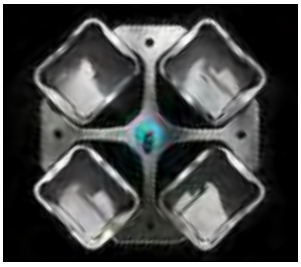
Rotor	
max. RPM I max. RCF [2]	4,500 min^{-1} I 4,573
max. capactiy	24 plates
run-up I run-down, braked in sec	115 I 116
angle I temperature in °C [1]	90° I +5
Cat. No.	**4294**

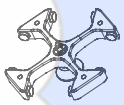
Bucket	
lid bioseal [5]	5629
Cat. No.	**4280**

Plates								
W x D x H in mm	128x86x15	128x86x17.5	128x86x22	128x86x44.5	128x86x46	128x86x83	124x82x20	-
capacity in ml	-	-	-	-	-	-	-	0.2
max. RCF [2]	4,573	4,573	4,573	4,573	4,573	4,573	4,573	4,573
radius in mm	202	202	202	202	202	202	202	202
Cat. No.	**MTP**	**MTP**	**CP**	**DWP**	**MS**	**QP**	**PCR plates 96-places**	**PCR strips**

Removal aid								
boring Ø x L in mm	-	-	-	-	-	-	-	-
plates / strips per rotor	24	24	20	8	4	4	4	48 x 8
Cat. No.	**4279**	**4279**	**4279**	**4279**	**4279**	**4279**	**4279 + 1485**	**4279 + 1485**

SWING-OUT ROTOR, 4-PLACE | 4294



Rotor	
max. RPM I max. RCF [2]	4,500 min^{-1} I 4,867
max. capactiy	20 Racks
run-up I run-down, braked in sec	115 I 116
angle I temperature in °C [1]	90° I +7
Cat. No.	**4294**

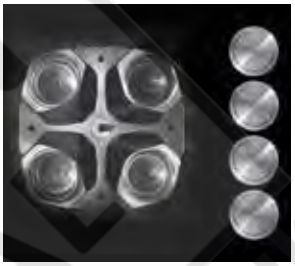
Bucket	
Cat. No.	**4257**

Rack	
W x D x H in mm	118 x 20 x 70
capacity in ml	-
max. RCF [2]	4,867
radius in mm	215
Cat. No.	**Hitachi Rack**

Removal aid	
boring Ø x L in mm	-
tubes per rotor	20
Cat. No.	**4259-A [23]**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
23) When using removal frame 4259-A, please take the spacer out of carrier 4257.

SWING-OUT ROTOR, 4-PLACE | 4294



Rotor	
max. RPM I max. RCF [2]	4,500 min^{-1} I 5,184
max. capactiy	4 x 1,000 ml
run-up I run-down, braked in sec	115 I 116
angle I temperature in °C [1]	90° I +5
Cat. No.	**4294**

Bucket	
adapter including lid	4255
Cat. No.	**4254**

Tubes															
capacity in ml	5	7	9	15	25	50	100	2.6–3.4	2.7–3	4–5.5	4.5–5	4.9	7.5–8.5	9 – 10	10
Ø x L in mm	12x75	12x100	14x100	17x100	24x100	34x100	44x100	13 x 65	11x66	15x75	11x92	13x90	15x92	16x92	15x102
max. RCF [2]	4,618	4,618	4,777	4,777	4,505	4,573	4,551	4,618	4,618	4,777	4,618	4,618	4,777	4,777	4,777
radius in mm	204	204	211	211	199	202	201	204	204	211	204	204	211	211	211
Cat. No.	**tubes [2]**							**blood collection / urine tubes**							

Adapter					+ 0726										
boring Ø x L in mm	13 x 58	13 x 58	17.5 x 53	17.5 x 53	26 x 72	36 x 79	45 x 78	13.5 x 58	13 x 58	17.5 x 53	13 x 58	13.5 x 58	17.5 x 53	17.5 x 53	17.5 x 53
tubes per rotor	120	120	76	76	28	16	8	84	120	76	120	84	76	76	76
Cat. No.	**4433**	**4433**	**4434**	**4434**	**4438**	**4439**	**4442**	**4435**	**4433**	**4434**	**4433**	**4435**	**4434**	**4434**	**4434**

Tubes															
capacity in ml	1.6 – 5	4 – 7	4 – 7	8	8.5 – 10	15	30	50	25	30	10	250	290	650	750
Ø x L in mm	13x75	13x100	16x75	16x125	16x100	17x120	25 x 110	29x115	25x90	25 x 110	16 x 80	61 x 122	62 x 137	97 x 139	97 x 152
max. RCF [2]	4,618	4,618	4,777	4,777	4,777	4,890	4,709	4,890	4,709	4,709	4,777	5,003	5,003	5,184	5,184
radius in mm	204	204	211	211	211	216	208	216	208	208	211	221	221	229	229
Cat. No.	**blood collection / urine tubes**					**tubes with screw cap**						**5127** [24]	**-** [24]	**0554** [24]	**0512** [24]

Adapter															
boring Ø x L in mm	13.5 x 58	13.5 x 58	17.5 x 53	17.5 x 53	17.5 x 53	17 x 88	26 x 72	30 x 87	26 x 72	26 x 72	17.5 x 53	62 x 92	62 x 92	98 x 138	98 x 138
tubes per rotor	84	84	76	76	76	48	28	20	28	28	76	4	4	4	4
Cat. No.	**4435**	**4435**	**4434**	**4434**	**4434**	**4437**	**4438**	**4441**	**4438**	**4438**	**4434**	**4443**	**4443**	**-**	**-**

Tubes								
capacity in ml	1,000	1,000	175	175	200	225	250	500
Ø x L in mm	96 x 176	98 x 138	61 x 118	61,5x144	60 x 130	61 x 137	60 x 162	96 x 147
max. RCF [2]	5,184	5,184	5,184	5,184	5,184	5,184	5,184	5,184
radius in mm	229	229	229	229	229	229	229	229
Cat. No.	**4239** [24]	**4255**	**Falcon**	**Nalgene**	**Nunc®**	**Falcon**	**Corning®**	**Corning®**

Adapter								
boring Ø x L in mm	98 x 138	-	-	-	-	-	-	-
tubes per rotor	4	4	4	4	4	4	4	4
Cat. No.	**-**	**-**	**4440**	**4430**	**4430**	**4440**	**4430**	**4449**

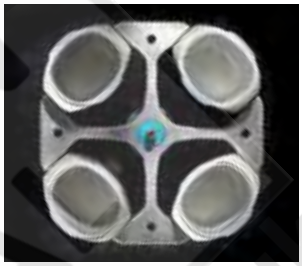
1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3.15) When using these tubes, bucket 4255 cannot be closed with its lid.
24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

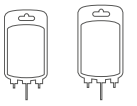
SWING-OUT ROTOR, 4-PLACE | 4294

Rotor	
max. RPM I max. RCF [2]	4,500 min^{-1} I 5,252
max. capactiy	4 blood bags
run-up I run-down, braked in sec	115 I 116
angle I temperature in °C [1]	90° I +2
Cat. No.	**4294**

+

Bucket	
Cat. No.	**4293**





Blood bags		
capacity in ml	450	500
blood bags	3-place	3-place
max. RCF [2]	5,252	5,252
radius in mm	232	232
Cat. No.	**blood bags**	

+

Insert		
boring Ø x L in mm	-	-
blood bags per rotor	4	4
Cat. No.	**4244-A**	**4244-A**

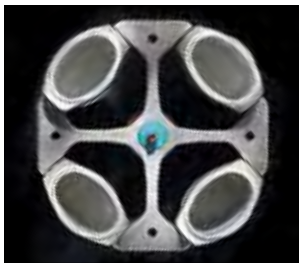
+ Additional blood bank accessories can be found on page 183

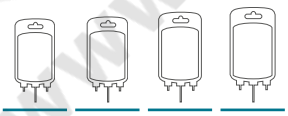
SWING-OUT ROTOR, 4-PLACE | 4294

Rotor	
max. RPM I max. RCF [2]	4,500 min^{-1} I 5,071
max. capactiy	4 blood bags
run-up I run-down, braked in sec	115 I 116
angle I temperature in °C [1]	90° I +3
Cat. No.	**4294**

+

Bucket	
Cat. No.	**4298-A**





Blood bags				
capacity in ml	450	500	750	1,000
blood bags	4-place	4-place	1-place	1-place
max. RCF [2]	5,003	5,003	5,003	5,071
radius in mm	221	221	221	224
Cat. No.	**blood bags**			

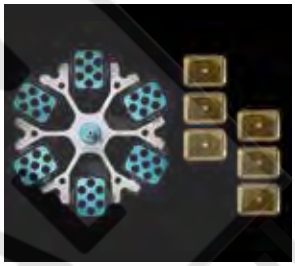
+

Insert				
boring Ø x L in mm	-	-	-	-
blood bags per rotor	4	4	4	4
Cat. No.	**4237-A**	**4237-A**	**4237-A**	**-**

+ Additional blood bank accessories can be found on page 183

1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

SWING-OUT ROTOR, 6-PLACE | 4296



Rotor	
max. RPM I max. RCF [2]	4,000 min^{-1} I 3,363
max. capactiy	6 x 100 ml
run-up I run-down, braked in sec	33 I 50
angle I max. noise level	90° I 52 dB (A)
temperature in °C [1]	0
Cat. No.	**4296**

Bucket	
lid	5053
Cat. No.	**5051**

Vessels															
capacity in ml		1.5	2	1.5	2	5	6	7	9	15	25	50	100	100	1–8
Ø x L in mm		11x38	11x38	11x38	11x38	12x75	12x82	12x100	14x100	17x100	24x100	34x100	44x100	40x115	simple / multiple
max. RCF [2]	top / bottom	2,486 / 3,363	2,486 / 3,363	3,363	3,363	3,309	3,309	3,291	3,309	3,291	3,291	3,291	3,291	3,291	2,290 / 3,274
radius in mm	top / bottom	139 / 188	139 / 188	188	188	185	185	184	185	184	184	184	184	184	128 / 183
Cat. No.		microliter tubes				tubes [2]									cyto chambers
Adapter															
boring Ø x L in mm		12.5x42	12.5x42	11.5x50	11.5x50	12.5x42	12.5x42	12.5x86	16x50	17.5x86	26x86	36x86	45.5x86	42x86	-
vessels per rotor		240	240	96	96	120	120	120	72	72	30	12	6	6	12
Cat. No.		**5257**	**5257**	**5281**	**5281**	**5227**	**5227**	**5247** [15]	**5264**	**5248** [15]	**5242**	**5243**	**5262**	**5249**	**5280**

Vessels															
capacity in ml		1.1–1.4	2.6–3.4	2.7–3	4–5.5	4.5–5	4.9	7.5–8.5	9–10	10	1.6–5	4–7	4–7	8.5–10	15	50
Ø x L in mm		8x66	13x65	11 x 66	15 x 75	11 x 92	13x90	15x92	16x92	15x102	13x75	13x100	16x75	16x100	17x120	29x115
max. RCF [2]		3,274	3,345	3,309	3,309	3,309	3,345	3,309	3,291	3,291	3,345	3,345	3,309	3,291	3,434	3,363
radius in mm		183	187	185	185	185	187	185	184	184	187	184	185	184	192	188
Cat. No.		blood collection / urine tubes													tubes with screw cap	
Adapter																
boring Ø x L in mm		11x44	13.5x52	12.5x42	16x50	12.5x42	13.5x52	16x50	17.6x86	17.6x86	13.5x52	13.5x86	16x50	17.5x86	17x90	30x86
vessels per rotor		120	72	120	72	120	72	72	66	66	72	72	72	72	42	12
Cat. No.		**5267**	**5268**	**5227**	**5264**	**5227**	**5268**	**5264**	**5258**	**5258**	**5268**	**6301**	**5264**	**5248**	**6306**	**5259**

Vessels				
capacity in ml		12	30	50
Ø x L in mm		17x100	25x110	29x115
max. RCF [2]		3,434	3,291	3,291
radius in mm		192	184	184
Cat. No.		tubes with screw cap		
Adapter				+ 6316
boring Ø x L in mm		17x90	26 x 86	36x86
vessels per rotor		42	30	12
Cat. No.		**6306**	**5266**	**5243**

CYTO Cyto system available for this model.
More information on page 178

1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3.11) When using these tubes, bucket 5051 cannot be closed with lid 5053.

SWING-OUT ROTOR, 6-PLACE | 4296

Rotor	
max. RPM I max. RCF	4,000 min^{-1} I 3,631
max. capacity	6 x 250 ml
run-up I run-down, braked in sec	33 I 50
angle I max. noise level	90° I 59 dB (A)
temperature in °C [1]	-2
Cat. No.	**4296**

Bucket	
lid bioseal [5]	5093
Cat. No.	**5092**

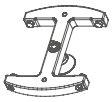
Vessels															
capacity in ml	5	6	7	15	25	50	100	100	250	1.1–1.4	1.1–1.4	2.6–3.4	2.7–3	2.7–3	4.9
Ø x L in mm	12x75	12x82	12x100	17x100	24x100	34x100	44x100	40x115	65x115	8 x 66	8 x 66	13 x 65	11x66	11x66	13x90
max. RCF [2]	3,542	3,542	3,542	3,488	3,434	3,488	3,488	3,488	3,631	3,488	3,077	3,077	3,488	3,077	3,488
radius in mm	198	198	198	195	192	195	195	195	203	195	172	172	195	172	195
Cat. No.	**tubes [2]**									**blood collection / urine tubes**					
Adapter															
boring Ø x L in mm	12.8x45	12.8x45	12.8x82	17.5x60.7	25.5x82	35.5x82.5	45.5x85	42x85	66x103	13.5x60.7	13x54.5	13x54.5	13.5x60.7	13x54.5	13.5x60.7
vessels per rotor	72	72	72	48	24	6	6	6	6	48	72	72	48	72	48
Cat. No.	**5128**	**5128**	**5120**	**5136**	**5122**	**5124**	**5125**	**5126**	**1791**	**5137**	**5138**	**5138**	**5137**	**5138**	**5137**

Vessels														
capacity in ml	4–4.5	4.5–5	7.5–8.5	9 – 10	10	1.6 – 5	4 – 7	4 – 7	8 [3.4)]	8.5 – 10	15	50	25	30	50
Ø x L in mm	15x75	11x92	15x92	16x92	15x102	13x75	16x75	13x100	16x125	16x100	17x120	29x115	25x90	25 x 110	29x115
max. RCF [2]	3,488	3,542	3,488	3,488	3,488	3,077	3,488	3,542	3,542	3,488	3,631	3,631	3,363	3,434	3,560
radius in mm	195	198	195	195	195	172	195	198	198	195	203	203	188	192	199
Cat. No.	**blood collection / urine tubes**										**tubes with screw cap**				
Adapter															
boring Ø x L in mm	17.5x60.7	12.8x82	17.5x60.7	17.5x60.7	17.5x60.7	13x54,5	17.5x60.7	12.8x82	17.5x82	17.5x60.7	17x85	30x85	26x73	25.5x82	30x99
vessels per rotor	48	72	48	48	48	72	48	72	42	48	42	12	18	24	12
Cat. No.	**5136**	**5120**	**5136**	**5136**	**5136**	**5138**	**5136**	**5120**	**5121 [4)]**	**5136**	**5129**	**5123**	**5134**	**5122**	**5135**

Vessels			
capacity in ml	10	250	290 [3.4)]
Ø x L in mm	16 x 80	61 x 122	62 x 137
max. RCF [2]	3,488	3,631	3,631
radius in mm	195	203	203
Cat. No.	**-**	**5127 [24)]**	**- [24)]**
Adapter			
boring Ø x L in mm	17.5x60.7	66x103	66x103
vessels per rotor	48	6	6
Cat. No.	**5136**	**6319**	**6319**

1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers.
The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3.4) When using these tubes, bucket 5051 or 5092 cannot be closed with lid 5053 or 5093.
4) Please remove the spacer.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

SWING-OUT ROTOR, 2-PLACE | 4282



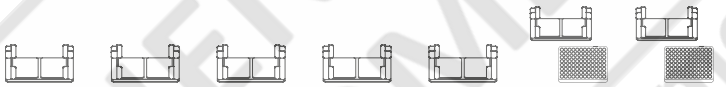
Rotor	
max. RPM I max. RCF	3,600 min^{-1} I 2,652
max. capacity	20 plates
run-up I run-down, braked in sec	87 I 94
angle I max. noise level	90° I 58 dB (A)
temperature in °C [1]	-2
Cat. No.	**4282**

+

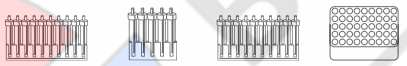
Bucket	
Cat. No.	**4285-A**

Plates							
W x D x H in mm	128x86x15	128x86x17.5	128x86x22	128x86x44.5	84x59x46	124x82x20	-
max. RCF [2]	2,434	2,434	2,434	2,434	2,434	2,434	2,434
radius in mm	168	168	168	168	168	168	168
Cat. No.	**MTP**	**MTP**	**CP**	**DWP**	**MS**	**PCR plates**	**PCR strips**

+

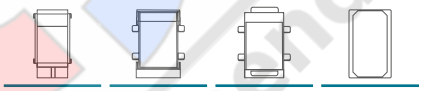


Removal aid							
boring Ø x L in mm	-	-	-	-	-	-	-
plates / strips per rotor	16	16	12	4	4	4	48 x 8
Cat. No.	**4281**	**4281**	**4281**	**4281**	**4281**	**4281+1485**	**4281+1485**



Racks				
W x D x H in mm	176x20x41	118x20x70	193x25x60	210x110x44
max. RCF [2]	2,652	2,652	2,652	2,579
radius in mm	183	183	183	178
Cat. No.	**Olympus Racks**	**Hitachi Racks**	**Behring Racks**	**Rack, 50-place**

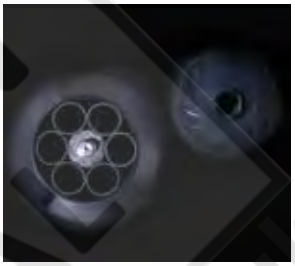
+



Adapter				
boring Ø x L in mm	-	-	-	-
plates / racks per rotor	12	20	10	2
Cat. No.	**4283-B**	**4287-B**	**4288-A**	**4263-A**

1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

ANGLE ROTOR, 6-PLACE | 4266



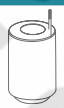
Rotor	
max. RPM I max. RCF	9,500 min^{-1} I 14,025
max. capacity	6 x 250 ml
run-up I run-down, braked in sec	82 I 96
angle	25°
temperature in °C [1]	+2
Cat. No.	**4266**

+

Lid bioseal [5] and phenol-resistant	
Cat. No.	**INCLUSIVE**

Vessels											
capacity in ml	15	25	94	15	50	10	30	50	85	94	250
Ø x L in mm	17x100	24x100	38x102	17x120	29x115	16x80	26x95	29x107	38 x 106	38 x 102	61x122
max. RCF [2]	13,319	12,915	12,310	12,915	12,108	13,420	12,915	12,108	12,310	12,310	14,025
radius in mm	132	128	122	128	120	133	128	120	122	122	139
Cat. No.	**tubes [2]**			**tubes with screw cap**							**5127 [24]**

+

Adapter											
boring Ø x L in mm	17.6 x 83	26x80	38.6x88	17x106	30x100	16.6x70	26x80	29x90	38.6 x 88	38.6 x 88	61.5x109
vessels per rotor	42	18	6	30	6	48	18	6	6	6	6
Cat. No.	**5646**	**5642**	**5644**	**5637**	**5638**	**5641**	**5642**	**5643**	**5644**	**5644**	**-**

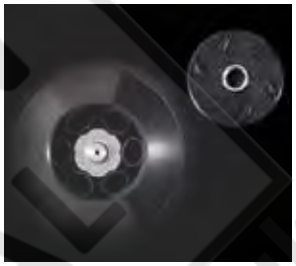
1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

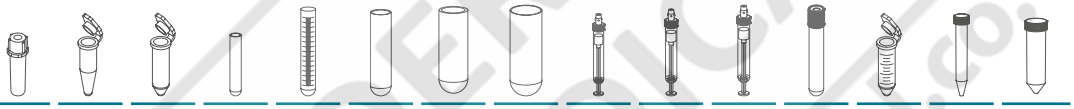
ANGLE ROTOR, 6-PLACE | 4246

Rotor	
max. RPM I max. RCF	11,500 min^{-1} I 18,038
max. capacity	6 x 94 ml
run-up I run-down, braked in sec	66 I 68
angle	45°
temperature in °C [1]	+4
Cat. No.	**4246**

+

Lid bioseal [5] and phenol-resistant	
Cat. No.	**INCLUSIVE**





Vessels															
capacity in ml	0.5	1.5	2.0	3	15	25	50	94	7.5 – 8.5	9 – 10	10	8.5 – 10	5	15	50
Ø x L in mm	10.7x36	11x38	11x38	10x60	17x100	24x100	34x100	38x102	15x92	16x92	15x102	16x100	17x59	17x120	29x115
max. RCF [2]	17,299	17,299	17,299	17,299	17,003	16,560	17,743	18,038	17,003	17,003	17,003	17,003	16,856	17,299	17,595
radius in mm	117	117	117	117	115	112	120	122	115	115	115	115	114	117	119
Cat. No.	**pediatric**	**microliter tubes**		**tubes [2]**					**blood collection / urine tubes**				**-**	**tubes with screw cap**	

+

Adapter															
boring Ø x L in mm	11.4x39	11.4x39	11.4x39	11.4x39	17.5x92	26x85	35x89	38.2x89.6	17.5x92	17.5x92	17.5x92	17.5x92	17x51	17x106	29.8x97
vessels per rotor	24	24	24	24	6	6	6	6	6	6	6	6	6	6	6
Cat. No.	**1449**	**1449**	**1449**	**1449**	**1451**	**1447**	**1463**	**-**	**1451**	**1451**	**1451**	**1451**	**1476**	**1466**	**1454**

Vessels					
capacity in ml	10	30	50	85	94
Ø x L in mm	16x80	26x85	29x107	38 x 106	38 x 102
max. RCF [2]	17,003	16,560	17,299	18,038	18,038
radius in mm	115	112	117	122	122
Cat. No.	**tubes with screw cap**				

+

Adapter					
boring Ø x L in mm	16.5x74	26x85	29x92	38.2x89.6	38.2x89.6
vessels per rotor	12	6	6	6	6
Cat. No.	**1448**	**1447**	**1446**	**-**	**-**

1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.

ROTO SILENTA 630 RS

Your first choice up to 12 liters

The ROTO SILENTA 630 RS is highly rated in the rapid and efficient centrifugation of blood bags. It is able to spin up to 12 liter of sample or 12 blood bags per run. Four and six-place rotor options are also available to offer the best possible fit.

In industrial or R&D applications the ROTO SILENTA accommodates six vessels up to 2,000 ml each. This unit includes refrigeration with a temperature range from -20°C to +40°C.

FEATURES

- RPM: 50 - 6,000 min^{-1} – adjustable in increments of 10
- RCF: 1 - 6,520 – adjustable in increments of 1
- Max. capacity: 6 x 2,000 ml
- The first choice in blood banking centrifuges
- Choice of 3 rotors
- Registered Medical Device
- Easy operation with keypad and control knob
- 89 program memories for more individuality
- 9 acceleration + 19 deceleration stages
- Coolable from -20 bis +40 °C with pre-cooling function
- Data reporting system (optional)

Documentation system for blood banks.
More information on page 160

More information about the control panel
can be found on page 198

FIELDS OF APPLICATION

- Hospitals
- Blood banks and transfusion medicine laboratories
- Pharmaceutical laboratories
- Food analyzing laboratories
- University / Academic research
- Cell culture laboratories
- Environmental laboratories

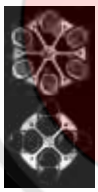
MEDICAL DEVICE 93/42/EEC

TECHNICAL DATA

	ROTO SILENTA 630 RS >) refrigerated
voltage *)	400 V 3 ~ + N
frequency	50 – 60 Hz
consumption	9,700 VA
emission, immunity	EN/IEC 61326-1, class B
max. capacity	6 x 2,000 ml
max. RPM	6,000 min^{-1}
max. RCF	6,520
running time	1 – 999 min: 59 s, ∞ continuous run
dimensions (W x D x H)	813 x 1,015 x 973 mm
weight	approx. 355 kg
temperature control, infinitely variable	from -20 to +40 °C
Cat. No.	**5005**
208 – 220 V +6 / -10 % 3- (+N) + PE, with internal transformer	5005-08
consumption	9,000 VA
weight	approx. 401 kg

*) Other voltages on request.
>) Other models models on request.

AVAILABLE ROTORS

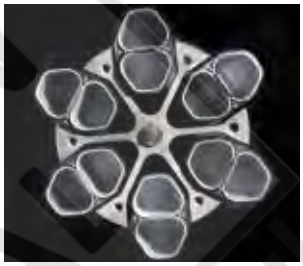
SWING-OUT ROTORS	angle	max. RPM	max. capacity	Cat. No.	page
 swing-out rotor, 6-place	90°	4,500 min^{-1}	6 x 2,000 ml	**4176**	152
swing-out rotor, 4-place	90°	4,500 min^{-1}	4 x 2,000 ml	**4174**	152
ANGLE ROTORS					
 angle rotor, 6-place	25°	6,000 min^{-1}	6 x 250 ml	**4570**	158

SWING-OUT ROTOR, 6- / 4-PLACE | 4176 / 4174

Rotor		
max. RPM		4,500 min^{-1}
max. RCF	Rotor 4176 / 4174	6,498 / 5,683
max. capacity		12 / 8 blood bag
run-up | run-down, braked in sec		125 | 197
angle | temperature in °C [1)]		90° | +16 / +10
Cat. No.		**4176 / 4174**

+

Bucket	
Cat. No.	**4524-A**





Blood bag				
capacity in ml		500	500	750
blood bag per system		4-place	4-place	1-place
max. RCF [26)]	Rotor 4176 / 4174	6,498 / 5,683	6,498 / 5,683	6,498 / 5,683
radius in mm		287 / 251	287 / 251	287 / 251
Cat. No.		**-**	**-**	**-**

+



Insert				
boring Ø x L in mm		-	-	-
blood bag systems per rotor		12 / 8	12 / 8	12 / 8
Cat. No.		**4529 [26)]-AO,-AM,-AU**	**4592-B**	**4592-B**

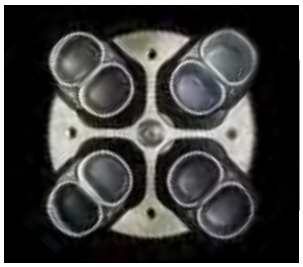
+ Additional blood bank accessories can be found on page 183

SWING-OUT ROTOR, 6- / 4-PLACE | 4176 / 4174

Rotor		
max. RPM		4,500 min^{-1}
max. RCF	Rotor 4176 / 4174	6,271 / 5,479
max. capacity		12 / 8 blood bag
run-up | run-down, braked in sec		125 | 197
angle | temperature in °C [1)]		90° | +10 / 0
Cat. No.		**4176 / 4174**

+

Bucket	
Cat. No.	**4546-A**



Blood bag	
capacity in ml	450
blood bag per system	4-place
max. RCF Rotor 4176 / 4174	6,271 / 5,479
radius in mm	277 / 242
Cat. No.	**-**

+

Insert	
boring Ø x L in mm	-
blood bag systems per rotor	12 / 8
Cat. No.	**4559-A**

+ Additional blood bank accessories can be found on page 183

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.

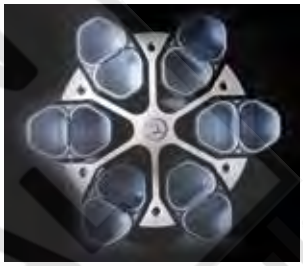
26) Includes blood bag hanging to prevent erythrocyte accumulation at low speeds. Different hanging heights allow customer-specific adjustments. (4529-AO top, 4529-AM center, 4529-AU bottom). Hanging blood bags may be centrifuged with a maximum RCF of 1,000.

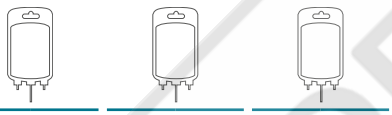
SWING-OUT ROTOR, 6- / 4-PLACE | 4176 / 4174

Rotor		
max. RPM		4,500 min-1
max. RCF	Rotor 4176 / 4174	6,498 / 5,705
max. capacity		12 / 8 blood bag
run-up I run-down, braked in sec		125 I 197
angle I temperature in °C [1]		90° I +16 / +10
Cat. No.		**4176 / 4174**

+

Bucket	
Cat. No.	**4591-A**





Blood bags				
capacity in ml		450	500	750
blood bag per system		3-place	4-place	1-place
max. RCF	Rotor 4176 / 4174	6,498 / 5,705	6,498 / 5,705	6,498 / 5,705
radius in mm		287 / 252	287 / 252	287 / 252
Cat. No.		**-**	**-**	**-**

+

Insert				
boring Ø x L in mm		-	-	-
blood bag systems per rotor		12 / 8	12 / 8	12 / 8
Cat. No.		**4598-A**	**4592-B**	**4592-B**

+ Additional blood bank accessories can be found on page 183

SWING-OUT ROTOR, 6- / 4-PLACE | 4176 / 4174

Rotor		
max. RPM		3,500 min-1
max. RCF	Rotor 4176 / 4174	3,848 / 3,328
max. capacity		6 x 2,000 ml
angle I temperature in °C [1]		90° I +16 / -12
Cat. No.		**4176 / 4174**

+

Bucket	
Cat. No.	**4595-C [31]**

Vessels			
capacity in ml		max. 1,600 [35]	2,000
W x D x H in mm		-	150 x 100 x 180
max. RCF	Rotor 4176 / 4174	3,821 / 3,328	3,848 / -
radius in mm		279 / 243	281 / -
run-up, in sec		95 / 131	29 / -
run-down, braked in sec		197 / 197	41 / -
Cat. No.		**-**	**0550 [24]**

+

Insert		
W x D x H in mm	145 x 91 x 146	-
vessels per rotor	6 / 4	6 / -
Cat. No.	**4596-A**	**-**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.
31) Adapter for accommodating sample tubes and blood collection tubes in carrier 4595-C on request.
35) Depending on the sample.

SWING-OUT ROTOR, 6- / 4-PLACE | 4176 / 4174

Rotor	
max. RPM	4,500 min^{-1}
max. RCF Rotor 4176 / 4174	6,520 / 5,705
max. capacity	6 / 4 blood bag
run-up | run-down, braked in sec	125 | 197
angle | temperature in °C [1]	90° | +9 / +3
Cat. No.	**4176 / 4174**

+

Bucket	
Cat. No.	**4523-A**



Blood bags			
capacity in ml	500	750	1,000
blood bag per system	4-place	1-place	1-place
max. RCF Rotor 4176 / 4174	6,475 / 6,475	5,660 / 5,660	6,520 / 5,705
radius in mm	285 / 250	285 / 250	288 / 252
Cat. No.	**-**	**-**	**-**

+

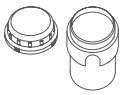

Insert			
boring Ø x L in mm	-	-	-
blood bag systems per rotor	6 / 4	6 / 4	6 / 4
Cat. No.	**4516-A**	**4516-A**	**-**

+ Additional blood bank accessories can be found on page 183

SWING-OUT ROTOR, 6- / 4-PLACE | 4176 / 4174

Rotor	
max. RPM	4,500 min^{-1}
max. RCF Rotor 4176 / 4174	6,316 / 5,524
max. capacity	6 / 4 blood bag
run-up | run-down, braked in sec	125 | 197
angle | temperature in °C [1]	90° | +9 / -9
Cat. No.	**4176 / 4174**

+



Bucket	
lid	5621
Cat. No.	**4547-B**


Blood bags		
capacity in ml	500	450
blood bag per system	4-place	3-place
max. RCF Rotor 4176 / 4174	6,316 / 5,524	6,316 / 5,524
radius in mm	279 / 244	279 / 244
Cat. No.	**-**	**-**

+


Insert		
boring Ø x L in mm	-	-
blood bag systems per rotor	6 / 4	6 / 4
Cat. No.	**4548**	**4548**

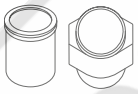
+ Additional blood bank accessories can be found on page 183

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.

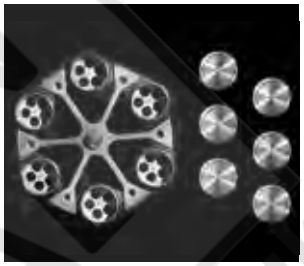
SWING-OUT ROTOR, 6- / 4-PLACE | 4176 / 4174

Rotor	
max. RPM	4,500 min^{-1}
max. RCF Rotor 4176 / 4174	6,294 / 5,501
max. capacity	6/4 x 1,000 ml
run-up I run-down, braked in sec	125 I 197
angle I temperature in °C [1]	90° I +4 / -11
Cat. No.	**4176 / 4174**

+



Bucket	
adapter including lid	4255
Cat. No.	**4579-A**



ROTO SILENTA 630 RS

Vessels															
capacity in ml	5	7	9	15	25	50	100	2.6–3.4	2.7–3	4–5.5	4.5–5	4.9	9–10	10	1.6–5
Ø x L in mm	12x75	12x100	14x100	17x100	24x100	34x100	44x100	13x65	11x66	15x75	11x92	13x90	16x92	15x102	13x75
max. RCF [2] Rotor 4176 / 4174	5,750 / 4,935	5,750 / 4,935	5,886 / 5,094	5,886 / 5,094	5,615 / 4,845	5,705 / 4,890	5,683 / 4,867	5,750 / 4,935	5,750 / 4,935	5,886 / 5,094	5,750 / 4,935	5,750 / 4,935	5,886 / 5,094	5,886 / 5,094	5,750 / 4,935
radius in mm	254 / 218	254 / 218	260 / 225	260 / 225	248 / 214	252 / 216	251 / 215	254 / 218	254 / 218	260 / 225	254 / 218	254 / 218	260 / 225	260 / 225	254 / 218
Cat. No.	**tubes [2]**							**blood collection / urine tubes**							

+

Adapter															
boring Ø x L in mm	13 x 58	13 x 58	17.5 x 53	17.5 x 53	26 x 72	36 x 79	45 x 78	13.5 x 58	13 x 58	17.5 x 53	13 x 58	13.5 x 58	17.5 x 53	17.5 x 53	13.5 x 58
vessels per rotor	180 / 120	180 / 120	114 / 76	114 / 76	42 / 28	24 / 16	12 / 8	126 / 84	180 / 120	114 / 76	180 / 120	126 / 84	114 / 76	114 / 76	126 / 84
Cat. No.	**4433**	**4433**	**4434**	**4434**	**4438**	**4439**	**4442**	**4435**	**4433**	**4434**	**4433**	**4435**	**4434**	**4434**	**4435**

Vessels															
capacity in ml	4 – 7	4 – 7	8.5 – 10	15	50	25	30	10	250	290	650	750	1,000	1,000	175
Ø x L in mm	13x100	16x75	16x100	17x120	29x115	25x90	25 x 110	16 x 80	61 x 122	62 x 137	97 x 139	97 x 152	96 x 176	98 x 138	61 x 118
max. RCF [2] Rotor 4176 / 4174	5,750 / 4,935	5,886 / 5,094	5,886 / 5,094	6,022 / 5,207	5,999 / 5,207	5,818 / 5,026	5,818 / 5,026	5,886 / 5,094	6,113 / 5,320	6,113 / 5,320	6,294 / 5,501	6,294 / 5,501	6,294 / 5,501	6,294 / 5,501	6,294 / 5,501
radius in mm	254 / 218	260 / 225	260 / 225	266 / 230	265 / 230	257 / 222	257 / 222	260 / 225	270 / 235	270 / 235	278 / 243	278 / 243	278 / 243	278 / 243	278 / 243
Cat. No.	**blood collection / urine tubes**			**tubes with screw cap**					**5127 [24]**	**- [24]**	**0554 [24]**	**0512 [24]**	**4239 [24]**	**4255**	**Falcon**

+

Adapter															
boring Ø x L in mm	13.5 x 58	17.5 x 53	17.5 x 53	17 x 88	30 x 87	26 x 72	26 x 72	16 x 80	62 x 92	62 x 92	98 x 138	98 x 138	98 x 138	-	61x118
vessels per rotor	126 / 84	114 / 76	114 / 76	72 / 48	30 / 20	42 / 28	42 / 28	114 / 76	6 / 4	6 / 4	6 / 4	6 / 4	6 / 4	6 / 4	6 / 4
Cat. No.	**4435**	**4434**	**4434**	**4437**	**4441**	**4438**	**4438**	**4434**	**4443**	**4443**	**-**	**-**	**-**	**-**	**4440**

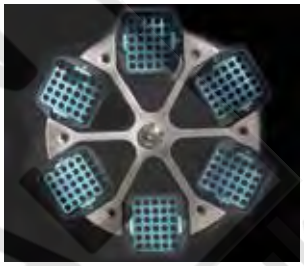
Vessels					
capacity in ml	175	200	225	250	500
Ø x L in mm	61 x 144	60 x 130	61 x 137	60 x 162	96 x 147
max. RCF [2] Rotor 4176 / 4174	6,294 / 5,501	6,294 / 5,501	6,294 / 5,501	6,294 / 5,501	6,294 / 5,501
radius in mm	278 / 243	278 / 243	278 / 243	278 / 243	278 / 243
Cat. No.	**Nalgene®**	**Nunc®**	**Falcon®**	**Corning®**	**Corning®**

+

Adapter					
boring Ø x L in mm	-	-	-	-	-
vessels per rotor	6 / 4	6 / 4	6 / 4	6 / 4	6 / 4
Cat. No.	**4430**	**4430**	**4440**	**4430**	**4449**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers.
The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3.15) When using these tubes, carrier 4255 cannot be closed with its lid.
24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

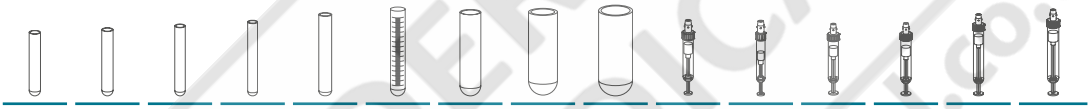
SWING-OUT ROTOR, 6- / 4-PLACE | 4176 / 4174



Rotor	
max. RPM	4,500 min^{-1}
max. RCF Rotor 4176 / 4174	5,999 / 5,184
max. capacity	6x750 ml
run-up I run-down, braked in sec	125 I 197
angle I temperature in °C [1]	90° I +14 / -1
Cat. No.	**4176 / 4174**

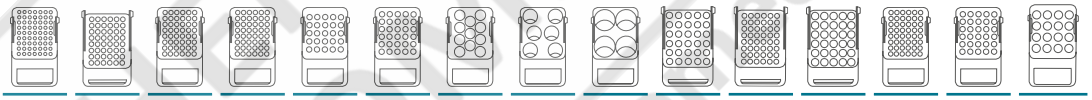
+

Bucket	
Cat. No.	**4522-A**



Vessels															
capacity in ml	4	5	6	7	12	15	25	50	100	2.6–3.4	2.7–3	4–5.5	4.5–5	7.5 – 8.5	9 – 10
Ø x L in mm	10x88	12x75	12x82	12x100	16x101	17x100	24x100	34x100	44x115	13 x 65	11 x 66	15x75	11 x 92	15x 92	16x92
max. RCF Rotor 4176 / 4174	5,818 / 5,003	5,818 / 5,003	5,818 / 5,003	5,818 / 5,003	5,818 / 5,003	5,818 / 5,003	5,818 / 5,003	5,818 / 5,003	5,818 / 5,003	5,818 / 5,003	5,818 / 5,003	5,818 / 5,003	5,818 / 5,003	5,818 / 5,003	5,818 / 5,003
radius in mm	257 / 221	257 / 221	257 / 221	257 / 221	257 / 221	257 / 221	257 / 221	257 / 221	257 / 221	257 / 221	257 / 221	257 / 221	257 / 221	257 / 221	257 / 221
Cat. No.	**tubes [2]**									**blood collection / urine tubes**					

+



Adapter															
boring Ø x L in mm	11 x 74	12.5 x 36	12.5 x 74	12.5 x 74	16x74	17.5x74	26x74	35x74	41.5x74	13.2x36	12.5x36	17.5x36	12.5 x 74	17.5 x 74	17.5 x 74
vessels per rotor	378 / 252	288 / 192	288 / 192	288 / 192	150 / 100	180 / 120	66 / 44	36 / 24	24 / 16	180 / 120	288 / 192	180 / 120	288 / 192	180 / 120	96 / 64
Cat. No.	**4224**	**4213-93**	**4213**	**4213**	**4223**	**4214**	**4215**	**4216**	**4218**	**4222-93**	**4213-93**	**4214-93**	**4213**	**4214**	**4220**

Vessels															
capacity in ml	10	1.6 – 5	4 – 7	4 – 7	8	8.5 – 10	15	50	12	30	50	250	290	600	650
Ø x L in mm	15x102	13x75	16x75	13x100	16x125	16x100	17x120	29x115	17 x 100	25 x 110	29x115	61 x122	62 x 137	93x134	97 x 139
max. RCF Rotor 4176 / 4174	5,818 / 5,003	5,818 / 5,003	5,818 / 5,003	5,818 / 5,003	5,818 / 5,003	5,818 / 5,003	5,999 / 5,184	5,999 / 5,184	5,818 / 5,003	5,818 / 5,003	5,909 / 5,094	5,818 / 5,003	5,818 / 5,003	5,999 / 5,184	5,999 / 5,184
radius in mm	257 / 221	257 / 221	257 / 221	257 / 221	257 / 221	257 / 221	265 / 229	265 / 229	257 / 221	257 / 221	261 / 225	257 / 221	257 / 221	265 / 229	265 / 229
Cat. No.	**blood collection / urine tubes**						**tubes with screw cap**					**5127 [24]**	**- [24]**	**0551 [24]**	**0554 [24]**

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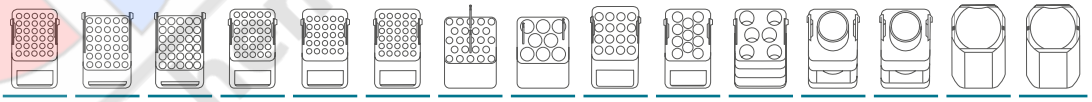
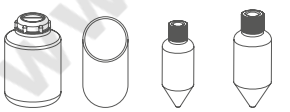


Adapter															
boring Ø x L in mm	17.5x74	13.2x36	17.5x36	13.2x74	16x74	17.5x74	17x70	30 x 70	17.5x74	26 x 74	30 x 96	62 x 90	62 x 90	94x105	97.5x105
vessels per rotor	180 / 120	180 / 120	180 / 120	180 / 120	150 / 100	180 / 120	138 / 92	48 / 32	96 / 64	66 / 44	36 / 24	6 / 4	6 / 4	6 / 4	6 / 4
Cat. No.	**4214**	**4222-93**	**4214-93**	**4222**	**4223**	**4214**	**4232**	**4245-A**	**4220**	**4215**	**4249**	**4238**	**4238**	**4233**	**4258**



Vessels				
capacity in ml	750	750	250	500
Ø x L in mm	97 x 152	93 x 137	60 x 162	96 x 147
max. RCF Rotor 4176 / 4174	5,999 / 5,184	5,999 / 5,184	5,818 / 5,003	5,999 / 5,184
radius in mm	265 / 229	265 / 229	257 / 221	265 / 229
Cat. No.	**0512 [24]**	**4234-A**	**Corning®**	**Corning®**

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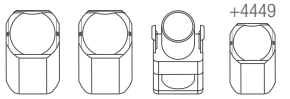
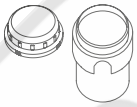
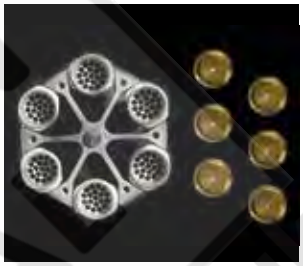


Adapter				
boring Ø x L in mm	97.5x105	97.5x105	61x125	97.5x105
vessels per rotor	6 / 4	6 / 4	6 / 4	6 / 4
Cat. No.	**4258**	**4258**	**6322**	**4258**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

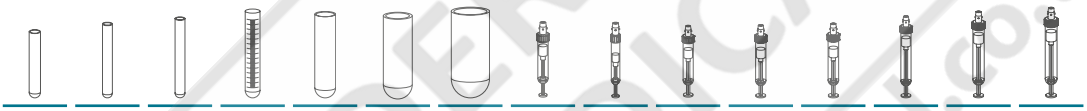
SWING-OUT ROTOR, 6- / 4-PLACE | 4176 / 4174





Rotor	
max. RPM	4,500 min^{-1}
max. RCF Rotor 4176 / 4174	6,384 / 5,592
max. capacity	6 x 1,000 ml
run-up | run-down, braked in sec	125 | 197
angle | temperature in °C [1]	90° | +9 / -9
Cat. No.	**4176 / 4174**

Bucket	
lid	5621
Cat. No.	**4547-B**



Vessels															
capacity in ml	5	7	9	15	25	50	100	2.6 – 3.4	2.7 – 3	4 – 5.5	4.5 – 5	4.9	7.5 – 8.2	9 – 10	10
Ø x L in mm	12 x 75	12 x 100	14 x 100	17 x 100	24 x 100	34 x 100	44 x 100	13 x 65	11 x 66	15 x 75	11 x 92	13 x 90	15 x 92	16 x 92	15 x 102
max. RCF [2] Rotor 4176 / 4174	5,841 / 5,026	5,841 / 5,026	5,977 / 5,184	5,977 / 5,184	5,728 / 4,913	5,773 / 4,961	5,750 / 4,958	5,841 / 5,026	5,841 / 5,026	5,977 / 5,184	5,841 / 5,026	5,841 / 5,026	5,977 / 5,184	5,977 / 5,184	5,977 / 5,184
radius in mm	258 / 222	258 / 222	264 / 229	264 / 229	253 / 217	255 / 220	254 / 219	258 / 222	258 / 222	264 / 229	258 / 222	258 / 222	264 / 229	264 / 229	264 / 229
Cat. No.	**tubes [2]**							**blood collection / urine tubes**							

Adapter															
					+ 0726										
boring Ø x L in mm	13 x 58	13 x 58	17.5 x 53	17.5 x 53	26 x 72	36 x 79	45 x 78	13.5 x 58	13 x 58	17.5 x 53	13 x 58	13.5 x 58	17.5 x 53	17.5 x 53	17.5 x 53
vessels per rotor	180 / 120	180 / 120	114 / 76	114 / 76	42 / 28	24 / 16	12 / 8	126 / 84	180 / 120	114 / 76	180 / 120	126 / 84	114 / 76	114 / 76	114 / 76
Cat. No.	**4433**	**4433**	**4434**	**4434**	**4438**	**4439**	**4442**	**4435**	**4433**	**4434**	**4433**	**4435**	**4434**	**4434**	**4434**

Vessels															
capacity in ml	1.6 – 5	4 – 7	4 – 7	8	8.5 – 10	15	50	25	30	10	250	290	650	750	1.000
Ø x L in mm	13 x 75	13 x 100	16 x 75	16 x 125	16 x 100	17 x 120	29 x 115	25 x 90	25 x 110	16 x 80	62 x 122	62 x 137	97 x 139	97 x 152	96 x 176
max. RCF [2] Rotor 4176 / 4174	5,841 / 5,026	5,841 / 5,026	5,977 / 5,184	5,977 / 5,184	5,977 / 5,184	6,090 / 5,298	6,090 / 5,298	5,909 / 5,117	5,909 / 5,117	5,977 / 5,184	6,203 / 5,411	6,203 / 5,411	6,384 / 5,592	6,384 / 5,592	6,384 / 5,592
radius in mm	258 / 222	258 / 222	264 / 229	264 / 229	264 / 229	269 / 234	269 / 234	261 / 226	261 / 226	264 / 229	274 / 239	274 / 239	282 / 247	282 / 247	282 / 247
Cat. No.	**blood collection / urine tubes**					**tubes with screw cap**					**5127 [24]**	**– [24]**	**0554 [24]**	**0512 [24]**	**4239 [24]**

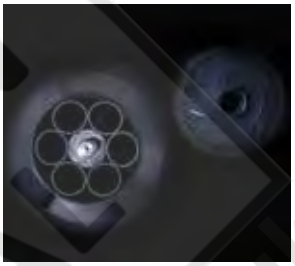
Adapter															
boring Ø x L in mm	13.5 x 58	13.5 x 58	17.5 x 53	17.5 x 53	17.5 x 53	17 x 88	30 x 87	26 x 72	26 x 72	17.5 x 53	62 x 92	62 x 92	98 x 141	98 x 141	98 x 141
vessels per rotor	126 / 84	126 / 84	114 / 76	114 / 76	114 / 76	72 / 48	30 / 20	42 / 28	42 / 28	114 / 76	6 / 4	6 / 4	6 / 4	6 / 4	6 / 4
Cat. No.	**4435**	**4435**	**4434**	**4434**	**4434**	**4437**	**4441**	**4438**	**4438**	**4434**	**4443**	**4443**	**-**	**-**	**-**

Vessels						
capacity in ml	175	175	200	225	250	500
Ø x L in mm	61 x 118	61 x 144	60 x 130	61 x 137	60 x 162	96 x 147
max. RCF [2] Rotor 4176 / 4174	6,384 / 5,592	6,384 / 5,592	6,384 / 5,592	6,384 / 5,592	6,384 / 5,592	6,384 / 5,592
radius in mm	282 / 247	282 / 247	282 / 247	282 / 247	282 / 247	282 / 247
Cat. No.	**Falcon®**	**Nalgene®**	**Nunc®**	**Falcon®**	**Corning®**	**Corning®**

Adapter						
boring Ø x L in mm	-	-	-	-	-	-
vessels per rotor	6 / 4	6 / 4	6 / 4	6 / 4	6 / 4	6 / 4
Cat. No.	**4440**	**4430**	**4430**	**4440**	**4430**	**4449**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
3.17) When using these tubes, bucket 4547-B cannot be closed with lid 5621.
24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

ANGLE ROTOR, 6-PLACE | 4570



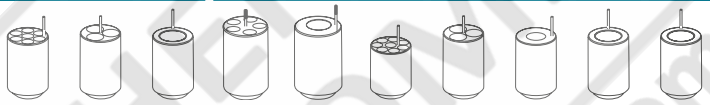
Rotor	
max. RPM I max. RCF	6,000 min^{-1} I 5,594
max. capacity	6 x 250 ml
run-up I run-down, braked in sec	64 I 69
angle I max. noise level	25° I 54 dB(A)
temperature in °C [1]	-16
Cat. No.	**4570**

+

Lid bioseal [5] and phenol-resistant	
Cat. No.	**INCLUSIVE**

Vessels											
capacity in ml	15	25	94	15	50	10	30	50	85	94	250
Ø x L in mm	17 x 100	24 x 100	38 x 102	17 x 120	29 x 115	16 x 80	26 x 95	29 x 107	38 x 106	38 x 102	61 x 122
max. RCF [2]	5,315	5,152	4,910	5,152	4,830	5,353	5,152	4,830	4,910	4,910	5,594
radius in mm	132	128	122	128	120	133	128	120	122	122	139
Cat. No.	**tubes [2]**			**tubes with screw cap**							**5127 [24]**

+



Adapter											
boring Ø x L in mm	17.6 x 83	26 x 80	38.6 x 88	17 x 106	30 x 100	16.6 x 70	26 x 80	29 x 90	38.6 x 88	38.6 x 88	61.5 x 109
vessels per rotor	42	18	6	30	6	48	18	6	6	6	6
Cat. No.	**5646**	**5642**	**5644**	**5637**	**5638**	**5641**	**5642**	**5643**	**5644**	**5644**	**-**

1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

HETTINFO II DOCUMENTATION SYSTEM

HettInfo II documents important work steps before and during centrifugation – this ensures transparency and traceable processes. The documentation system is operated via a touch display, which guides the user step by step through the centrifugation and records all significant process data.

All documented data points are temporarily stored locally and can be exported directly after the centrifugation or at a defined time as a CSV file. The data can be stored on the network or exported to a USB stick. This makes HettInfo II system independent and facilitates further processing into another software system.

ADVANTAGES

1. **Touch display**
   HettInfo II can be operated simply and easily via the touch display – even with laboratory gloves.
2. **Step-by-step instructions**
   With the step-by-step instructions, the user always knows exactly what to do next. In the event of incorrect operation or errors, a visual and audible message is issued immediately.
3. **Automatic data export**
   Data obtained can be exported after each run or in specific times.
4. **Universal data format**
   The exported CSV file is easy to process and work independently for greater compatibility with an existing system.

TECHNICAL FEATURES

Compatibility	ROTO SILENTA 630 RS, ROTIXA 500 RS
4.3“ touch display	Process status display, error messages, settings
User	Any number of users possible
Data logging Scan Module	User ID, blood bag ID, program number
Run data logging	Centrifuge names, centrifuge data, date, start and end time, temperature, radius, acceleration time, braking time, total running time, RPM, RCF, integral RCF, cycle time, brake deactivation speed, end result
File format	CSV
Ports	LAN, USB
Logbook	Documentation of error messages. Export as CSV file on USB stick possible.

MODULES

HETTINFO II

With HettInfo II you can record running data of your ROTO SILENTA 630 RS or ROTIXA 500 RS centrifuge. To record a complete centrifugation process, we recommend HettInfo II plus Scan Module.

Articles	Includes	Cat. No
HettInfo II – ROTO SILENTA 630 RS	Firmware, touch display	0955
HettInfo II – ROTIXA 500 RS	Firmware, touch display	0956

SCAN MODULE

The barcode scanner included in the Scan Module records all data reliably. The ergonomic holder ensures easy handling and offers secure protection when not in use.

Barcode scanners from the HettInfo I series are compatible with HettInfo II and can still be used.

Articles	Includes	Cat. No
Scan Module – ROTO SILENTA 630 RS	Barcode scanner, bracket, cable clamps	0959
Scan Module – ROTIXA 500 RS	Barcode scanner, bracket, cable clamps	0960

ADD-ON KIT

Articles	Includes	Cat. No
Add-on Kit for model 5005	Firmware, touch display, front panel	E4378
Add-on Kit for model 5005-80	Firmware, touch display, front panel	E4393
Add-on Kit for model 5005-90	Firmware, touch display, front panel	E4416
Add-on Kit for model 4950	Firmware, touch display, front panel	E4409

With the Add-on Kit, ROTO SILENTA 630 RS models from model year 01/2008* can be upgraded to HettInfo II. To capture a complete centrifugation process, we recommend the Add-on Kit plus Scan Module.

* Older models on request.

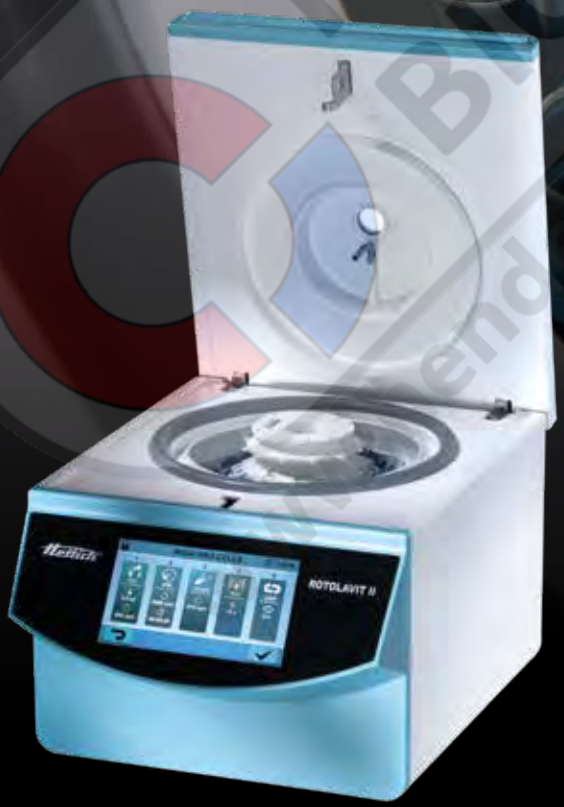
PRODUCT VIDEOS

Would you like to learn more about this product? Scan the QR Code to visit our YouTube channel:

www.youtube.com/hettichlabtechnology

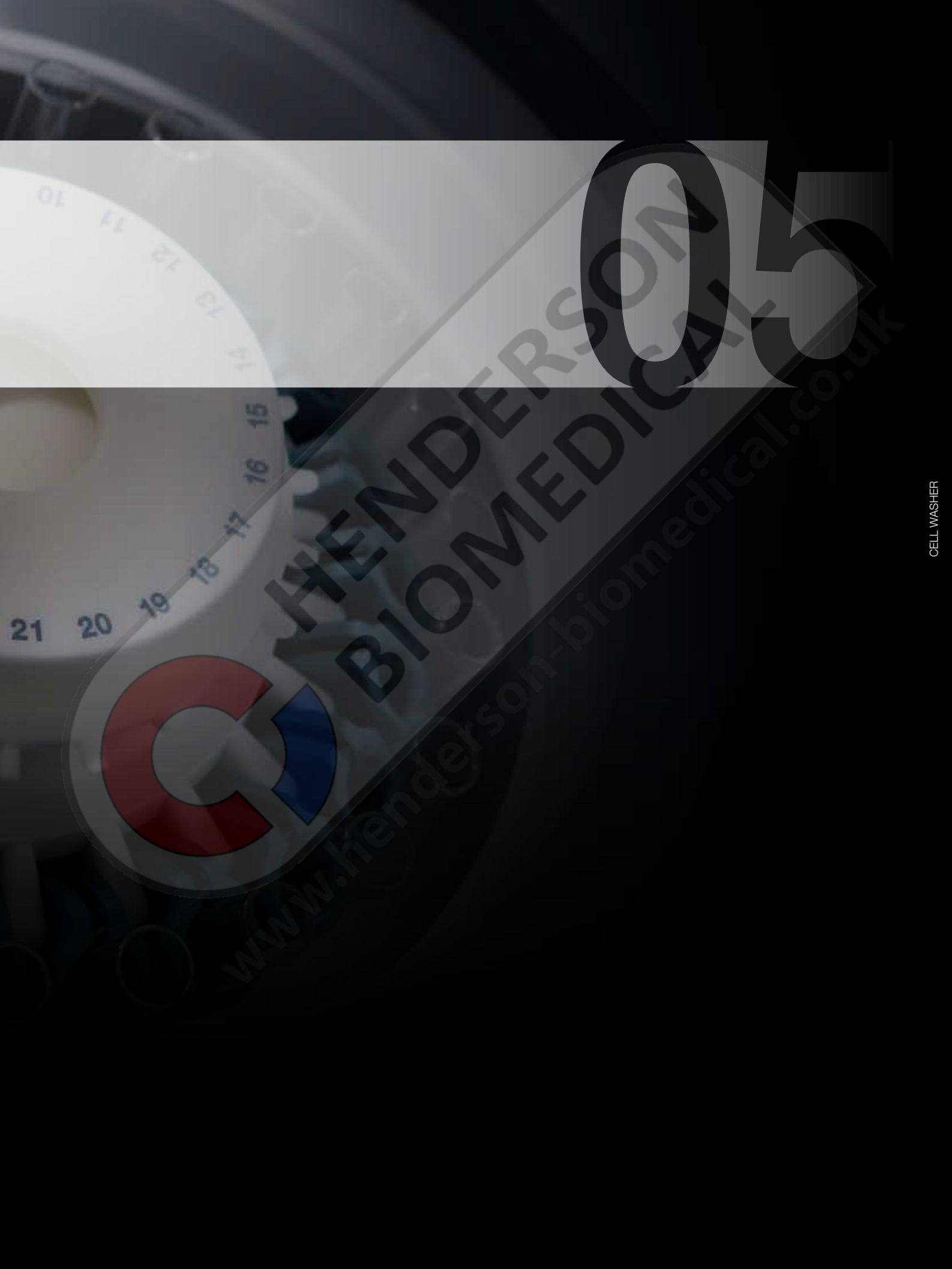
CELL WASHER

Automated cell washing centrifuge



ROTOLAVIT II

on page 164



05

CELL WASHER

ROTOLAVIT II

User friendly serology solutions

The ROTOLAVIT II cell washing system facilitates routine tasks in transfusion laboratories. It was developed for cross-matching, as well as antibody search and differentiation, and for cell washing in TB tests. Its modern touch screen enables the simple and rapid input of up to 20 different programs. The centrifuge has a small footprint and delivers reliable results without the need for costly consumables.

FEATURES

- Max. RPM: 3,500 min^{-1}
- Max. RCF: 1,438
- Max. capacity: 24 standard tubes
- Automatic cell washing system for serological testing
- Choice of 2 rotors 12-place or 24-place
- IVD-conform according to directive 98/79/EC
- Maximum noise level of ≤ 49 dB (A)
- Easy operation with intuitiv touch screen
- 24 program memories for more individuality
  7 pre-installed application programs

FIELDS OF APPLICATION

- Hospitals
- Hematological laboratories
- Blood centers
- Clinical laboratories

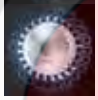
IVD CONFORM
according to directive 98/79/EC

TECHNICAL DATA

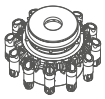
	ROTOLAVIT II
voltage	100 – 240 V 1 ~
frequency	50 – 60 Hz
consumption	144 VA
emission, immunity	EN/IEC 61326-3-2 / FCC CFR47 part 15, ed 2015-04-21 (e-CFR) class B
max. capacity	24 standard tubes (10 x 75 mm or 12 x 75 mm)
max. RPM	3,500 min^{-1}
max. RCF	1,438
radius (both rotors)	105 mm
dimensions (H x W x D)	330 x 480 x 280 mm
weight	approx. 24.5 kg
max. noise level	≤ 49 dB (A)
Cat. No.	**1008-00**

The ROTOLAVIT II is not available in all countries.

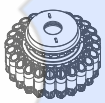
AVAILABLE ROTORS

SWING-OUT ROTORS	angle	max. RPM	max. capacity	Cat. No	page
 swing-out rotor, 12-place	45°	3,500 min	12 x (10 x 75 mm* or 12 x 75 mm) * Tubes requires adapter No. **1019**	**1017-A**	166
 swing-out rotor, 24-place	45°	3,500 min	24 x (10 x 75 mm* or 12 x 75 mm) * Tubes requires adapter No. **1019**	**1018-A**	166

SWING-OUT ROTOR, 12-PLACE | 1017-A

Rotor		
max. RPM I max. RCF	3,500 min^{-1} I 1,438	
max. capacity	12 x 5 ml	
angle I max. noise level	45° I 49 dB (A)	
Cat. No.	**1017-A**	
Vessels		
capacity in ml	3	5
Ø x L in mm	10 x 75	12 x 75
max. RCF [2]	1,438	1,438
radius in mm	105	105
Cat. No.	**tubes [2]**	
+		
Adapter		
boring Ø x L in mm	-	-
vessels per rotor	12	12
Cat. No.	**1019 (12 pcs.)**	**-**

SWING-OUT ROTOR, 24-PLACE | 1018-A

Rotor		
max. RPM I max. RCF	3,500 min^{-1} I 1,438	
max. capacity	24 x 5 ml	
angle I max. noise level	45° I 49 dB (A)	
Cat. No.	**1018-A**	
Vessels		
capacity in ml	3	5
Ø x L in mm	10 x 75	12 x 75
max. RCF [2]	1,438	1,438
radius in mm	105	105
Cat. No.	**tubes [2]**	
+		
Adapter		
boring Ø x L in mm	-	-
vessels per rotor	24	24
Cat. No.	**1019 (12 pcs.)**	**-**

2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.

DUAL CENTRIFUGE

Homogenizing, mixing and milling – fast and efficient

ZENTRIMIX 380 R
on page 170

06

DUAL CENTRIFUGE

ZENTRIMIX 380 R

Efficient and safe work in the laboratory

The dual centrifuge ZentriMix 380 R allows many challenging laboratory tasks in research, development and analytics in a very efficient way or makes them possible for the first time. Examples are the rapid mixing of viscous materials, the production of nanoparticles in closed (sterile) vessels or tissue disruption. A particular advantage is the powerful cooling system for temperature-sensitive samples.

The ZentriMix 380 R was developed on the basis of proven Hettich centrifuge technology. This makes the device safe, reliable and durable. In addition, the compact design and the low noise level ensure a comfortable working environment in the laboratory.

FEATURES

- (Nano-) Milling of samples
- QuEChERS-Analysis in one step in 50-70% less time
- Fast und homogeneous Mixing of highly viscous materials
- Usage of inexpensive standard-vials
- Eliminates cleaning time and effort vs. the standard mills or mixers
- Guarantees sterility of the sample (i.e. genetic analysis after Milling)
- Integrated cooling for sensitive samples
- Very wide volume bandwidth when mixing (2 ml to 200 ml)

More information about the control panel can be found on page 198

FIELDS OF APPLICATION

- Analytical laboratories
- Food control laboratories
- University / Academic research
- Pharmaceutical laboratories
- Forensic laboratories
- Environmental laboratories
- Cell culture laboratories
- Cosmetic laboratories

TECHNICAL DATA

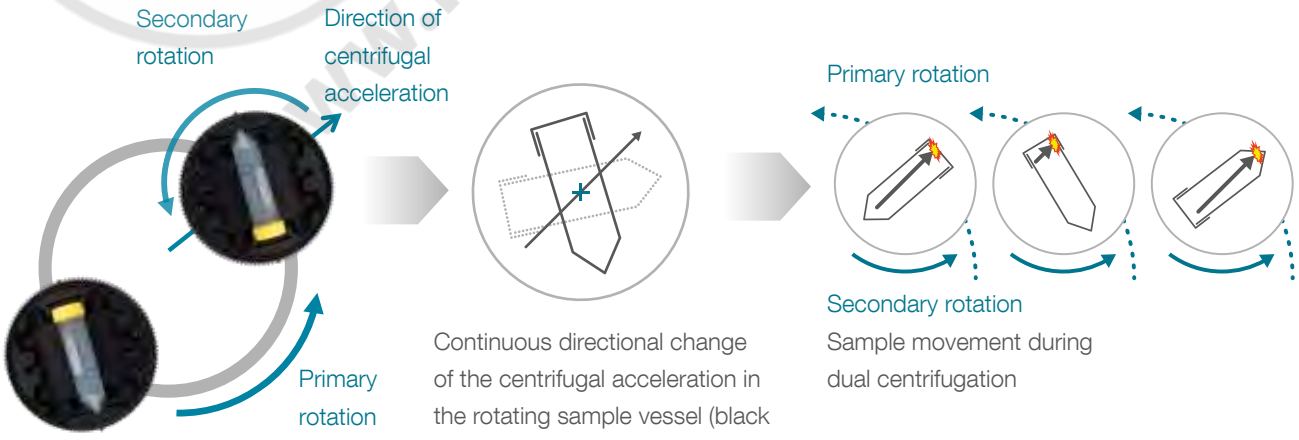
	ZentriMix 380 R	
voltage [1]	200 – 240 V 1 ~	110 – 127 V 1 ~
frequency	50 – 60 Hz	60 Hz
consumption	1,400 VA	1,600 VA
emission, immunity	EN/IEC 61326-1, class B	FCC class B
max. capacity	2 x 200 ml / 40 x 2.0 ml	2 x 200 ml / 40 x 2.0 ml
max. RPM (S rotor / Swing-out rotor, 4-place)	2,500 / 5,000 min^{-1}	2,500 / 5,00 min^{-1}
max. RCF (S rotor / Swing-out rotor, 4-place)	1,048 / 4,863	1,048 / 4,863
dimensions (W x D x H)	472 x 759 x 418 mm	472 x 769 x 418 mm
weight	approx. 81.5 kg	approx. 89 kg
Cat. No.	**3200**	**3200-01**

1) Other voltages on request.

AVAILABLE ROTORS

	ROTORS	angle	max. RPM	max. capacity	Cat. No.	page
	H rotor, 2-place	40°	1,500 min^{-1}	2 x 200 ml	**3206**	172
	S rotor, 2-place	40°	2,500 min^{-1}	2 x 200 ml	**3205**	172
	Swing-out rotor, 4-place	40°	5,000 min^{-1}	4 x 250 ml	**3234**	173

OPERATING PRINCIPLE OF THE ROTOR

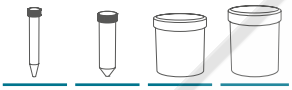


Continuous directional change of the centrifugal acceleration in the rotating sample vessel (black arrow)

Sample movement during dual centrifugation

H ROTOR, 2-PLACE | 3206

Rotor	
max. RPM I max. RCF	1,500 min^{-1} I 377
max. capacity	2 x 200 ml
run-up I run-down, braked in sec	22 I 24
angle I temperature in °C [2]	40° I +20
Cat. No.	**3206**



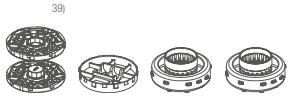
Vessels				
capacity in ml	15	50	150	200
Ø x L in mm	17 x 120	29 x 115	68 x 60	68 x 79
max. RCF [2]	377	377	377	377
radius in mm	150	150	150	150
Cat. No.	tubes		jars with screw cap	

Adapter				
vessels per rotor	6	6	2	2
Cat. No.	**3218**	**3218**	**3221-A**	**3221-A**

S-ROTOR, 2-PLACE | 3205

Rotor	
max. RPM I max. RCF	2,500 min^{-1} I 1,048
max. capacity	2 x 200 ml
run-up I run-down, braked in sec	35 I 35
angle I temperature in °C [2]	40° I +20
Cat. No.	**3205**

Vessels				
capacity in ml	2.0	10	150	200
Ø x L in mm	11 x 45.5	25.5 x 49	68 x 60	68 x 79
max. RCF [2]	1,048	1,048	1,048	1,048
radius in mm	150	150	150	150
Cat. No.	-	-	jars with screw cap	



Adapter				
vessels per rotor	4	4	2	2
Cat. No.	**3236**	**3211**	**3221-A**	**3221-A**

Removal aid for Twist-Top disk 3236. **3210**

37) Conical 2 ml Sarstedt PP microlitre tubes with screw cap (Art.No. 72.693.005)

38.1) Please only use polypropylene vessels in accordance with ISO 8362 (No Glass!), to fit into the adapter the height of the vessel including crimp cap and stopper should be 48.5 mm.

39) All S Rotor adapters can also be used in the H Rotor.

SWING-OUT ROTOR, 4-PLACE | 3234

Rotor		Bucket	
max. RPM I max. RCF	5,000 min^{-1} I 4,863	lid bioseal [5]	1751
max. capacity	4 x 250 ml	**Cat. No.**	**1752**
run-up I run-down, braked in sec	42 I 27		
angle	90°		
Cat. No.	**3234**		

Vessels													
		38.2)											40)
capacity in ml		10	9	15	94	100	100	250	15	50	30	50	250
Ø x L in mm		25.5 x 49	14 x 100	17 x 100	38 x 102	40 x 115	44 x 100	65 x 115	17 x 120	29 x 115	25 x 110	29 x 115	61 x 122
max. RCF [7]	top / bottom	4,695	4,668	4,668	4,807	4,640	4,640	4,640	4,863	4,863	4,528	4,752	4,863
radius in mm	top / bottom	168	167	167	172	166	166	166	174	174	162	170	174
Bestell-Nr.		**-**	**tubes [7]**						**tubes with screw cap**				

Adapter												
boring Ø x L in mm	26 x 33	17.5 x 61	17.5 x 61	38.5 x 80	41 x 97	45 x 87	66 x 104.5	17 x 84	30 x 84	26.5 x 72	30 x 80	62 x 100
vessels per rotor	24	52	52	8	4	4	4	36	16	20	16	4
Cat. No.	**3235**	**1763-A**	**1763-A**	**1777**	**1767**	**1766**	**1768**	**1771-A**	**1772-A**	**1779**	**1774-A**	**1769**

5) Tested by the TÜV in conformity with DIN EN 61010, section 2-020.
7) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers.
38.2) Polypropylene vessels in accordance with ISO 8362.
40) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

PRODUCT VIDEOS

Would you like to learn more about this product? Scan the QR Code to visit our YouTube channel:

www.youtube.com/hettichlabtechnology

AUTOMATED CENTRIFUGES

We are the world leader in automated centrifuges

Since the introduction of the first robotically integrated centrifuges over 25 years ago, Hettich is still setting the benchmark in centrifuge automation technology.

We have successfully integrated in most of today's laboratory automation systems and are recognized globally for the quality, precision and safety of our units. We currently offer three different automationfriendly models – each designed for reliable performance in high-use automation settings.

07

MIKRO 220
ROBOTIC

ROTINA 380
ROBOTIC

ROTANTA 460
ROBOTIC

Find more information in our special brochure or on our website at
www.hettichlab.com

EQUIPMENT

The useful addition

CYTO SYSTEM
on page 178

ROLLING CABINET
on page 183

BLOOD BANK ACCESSORIES
on page 183

08

HETTICH CYTO SYSTEM

Cytological preparations – safe and economic

Increased demands on security or flexibility as well as time and cost pressures represent a large challenge for today's cytology laboratory. Hettich's three cyto systems are available to tackle these challenges. Reliable, flexible and cost-saving solutions – all IVD-compliant according to EU Directive 98/79/EC.

SYSTEM 1

System 1 is particularly suitable for a high sample throughput thanks to its 12-place rotor. In addition, the autoclavable swing-out rotor with a TÜV certified, bioseal rotor lid provides maximum safety. This system can be used in two proven Hettich benchtop centrifuges, offers comprehensive accessories and is very easy to handle. The end results is an optimal cell presentation.

Compatible for models:
UNIVERSAL 320 / 320 R | ROTOFIX 32 A

Benefits:
- Closed, autoclavable rotor with Bio-Seal lid
- 12-place swing-out rotor for maximum sample throughput
- Large selection of cytochambers for single and multiple use. Re-usable cytochambers are autoclavable
- Easy handling
- Good cell representation

SYSTEM 2

This system offers you the highest possible flexibility. On the one hand, volumes between 1 and 8 ml can be prepared while up to 8 cell sediments can fit on a single slide. In addition, this accessory can be used in many Hettich centrifuges, often without rotor replacement. This accessory is inexpensive and is characterized by a high, representative cell yield.

Compatible for models:
ROTOFIX 32 A | UNIVERSAL 320 / 320 R | ROTINA 380 / 380 R | ROTINA 420 / 420 R | ROTANTA 460 / 460 R | ROTIXA 500 RS

Benefits:
- Large variety of accessories
- Flexible sample volumes
- Can be used with and without filter cards, depending on application and requirements.
- Very high cell yield

SYSTEM 3

System 3 combines the easy handling of System 1 with the flexibility and price advantage of System 2. It can operate in a variety of Hettich centrifuges and, like System 1, requires only a single centrifugation step to arrive at a dry cell pellet. The three different sediment size options give a distinct advantage.

Compatible for models:
ROTOFIX 32 A | ROTINA 420 / 420 R | UNIVERSAL 320 / 320 R

Benefits:
- Easy handling
- Ideal for small sample volumes
- Can be used with and without filter cards, depending on application and requirements. (Dry or moist cell sediment)

Assembly of a complete cyto insert

SYSTEM 1


cyto chamber with filter card


Clips


swing-out rotor, 12-place

MOST POPULAR

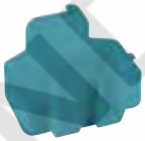
SYSTEM 2


lid


ring


cyto chamber


Slide carrier with filter card


bucket

SYSTEM 3


lid


cyto chamber


Slide carrier with filter card and ring


bucket

SYSTEM 1 – rotor and accessories

SWING-OUT ROTOR

Swing-out rotor, 12-place For ROTOFIX 32 A | UNIVERSAL 320 / 320 R	
max. RPM | max. RCF	2,000 min^{-1} | 438
max. capacity	12 cyto chambers
run-up | run-down, braked in sec	19 | 18
Angle	90°
Cat. No.	**1515-A**

+

Lid bioseal[5]	
Cat. No.	**INCLUSIVE**

Stand	
Cat. No.	**1528**

CYTO CHAMBERS


Cyto chambers (disposable)		
capacity in ml	0.5	0.2
area in mm²	28.3	28.3
Ø in mm	6	6
Cat. No.	**1531 (50 pcs.) 1534 (500 pcs.)**	**1532 (50 pcs.)**

+


Clips (autoclavable)		
Cat. No.	**1524 (4 pcs.)**	**1524 (4 pcs.)**

+


Filter cards		
Cat. No.	**filter card white (inclusive)**	**filter card brown (inclusive)**


Cyto chambers (re-usable, autoclavable)		
capacity in ml	0.5	6 [18]
area in mm² / (L x W) in mm	28.3	13.4x22
Ø in mm	6	-
Cat. No.	**1538 (12 pcs.)**	**1536 (12 pcs.)**

+


Clips (autoclavable)		
Cat. No.	**1524 (4 pcs.)**	**1524 (4 pcs.)**

+


Filter cards / seals		
Cat. No.	**1539 (200 pcs.)**	**1537 (100 pcs.)**

5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.

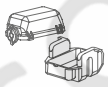
18) This is the maximum capacity. The recommended quantity to be used per chamber is 4 ml.

SYSTEM 2 – rotors and equipment

SWING-OUT ROTOR

Swing-out rotor, 4-place For ROTOFIX 32 A | UNIVERSAL 320 / 320 R	
max. RPM I max. RCF	4,000 min^{-1} I 2,451
max. capacity	8 cyto chambers
run-up I run-down, braked in sec	22 I 25
angle	90°
Cat. No.	**1624**

+



Bucket	
lid	1661
Cat. No.	**1660**

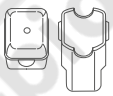
Swing-out rotor, 4-place For UNIVERSAL 320 / 320 R	
max. RPM I max. RCF	5,000 min^{-1} I 2,879
max. capacity	8 cyto chambers
run-up I run-down, braked in sec	30 I 32
angle I temperature in °C [1]	90° I -10
Cat. No.	**1494**

+

Bucket	
Cat. No.	**1452**

Swing-out rotor, 4-place For ROTINA 380 / 380 R	
max. RPM I max. RCF	4,000 min^{-1} I 2,898
max. capacity	16 cyto chambers
run-up I run-down, braked in sec	24 I 17
angle I temperature in °C [1]	90° I -8
Cat. No.	**1798**

+

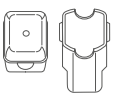


Bucket	
lid	5053
Cat. No.	**5051**

Adapter	
Cat. No.	**5280**

Swing-out rotor, 4-place For ROTINA 420 / 420 R	
max. RPM I max. RCF	4,000 min^{-1} I 2,898
max. capacity	16 cyto chambers
run-up I run-down, braked in sec	18 I 16
angle I temperature in °C [1]	90° I -1
Cat. No.	**4753**

+

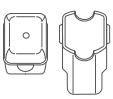


Bucket	
lid	5053
Cat. No.	**5051**

Adapter	
Cat. No.	**5280**

Swing-out rotor, 4-place For ROTANTA 460 / 460 R / 460 RC / 460 RF	
max. RPM I max. RCF	4,000 min^{-1} I 3,095
max. capacity	16 cyto chambers
run-up I run-down, braked in sec	40 I 45
angle	90°
Cat. No.	**5694**

+



Bucket	
lid	5053
Cat. No.	**5051**

Adapter	
Cat. No.	**5280**

Swing-out rotor, 4-place
For ROTANTA 460 / 460 R / 460 RC / 460 RF

max. RPM I max. RCF	4,600 min^{-1} I 4,069
max. capacity	16 cyto chambers
run-up I run-down, braked in sec	75 I 88
angle I temperature in °C [1]	90° I +10
Cat. No.	**5699-R**

+

Bucket

Cat. No.	**5628**

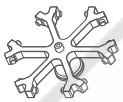
Adapter

Cat. No.	**5220-A**

Adapter

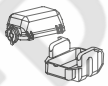
Cat. No.	**5280**

Swing-out rotor, 6-place
For ROTOFIX 32 A | UNIVERSAL 320 / 320 R



max. RPM I max. RCF	4,000 min^{-1} I 2,039
max. capacity	12 cyto chambers
run-up I run-down, braked in sec	22 I 25
angle	90°
Cat. No.	**1626**

Bucket



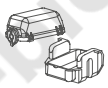
lid	1661
Cat. No.	**1660**

Swing-out rotor, 6-place
Passend für ROTINA 380 / 380 R

max. RPM I max. RCF	4,000 min^{-1} I 2,003
max. capacity	12 cyto chambers
run-up I run-down, braked in sec	19 I 18
angle I temperature in °C [1]	90° I -6
Cat. No.	**1726**

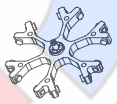
+

Bucket



lid	1661
Cat. No.	**1660**

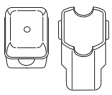
Swing-out rotor, 6-place
For ROTANTA 460 | 460 R | 460 RC | 460 RF



max. RPM I max. RCF	4,000 min^{-1} I 3,291
max. capacity	24 cyto chambers
run-up I run-down, braked in sec	38 I 46
angle I temperature in °C [1]	90° I 0
Cat. No.	**4446**

+

Bucket



lid	5053
Cat. No.	**5051**

Adapter

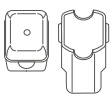
Cat. No.	**5280**

Swing-out rotor, 6-place
For ROTIXA 500 RS

max. RPM I max. RCF	4,000 min^{-1} I 3,274
max. capacity	24 cyto chambers
run-up I run-down, braked in sec	33 I 50
angle I temperature in °C [1]	90° I 0
Cat. No.	**4296**

+

Bucket



lid	5053
Cat. No.	**5051**

Adpater

Cat. No.	**5280**

CYTO CHAMBERS

Cyto chambers												
capacity in ml	1		2		4		8		3 x 2		4 x 1	
area in mm²	30		60		120		240		3 x 60		4 x 30	
Ø in mm	6.2		8.7		12.4		17.5		3 x 8.7		4 x 6.2	
Cat. No.	**1663-100** (100 pcs.)		**1664-100** (100 pcs.)		**1665-100** (100 pcs.)		**1666-100** (100 pcs.)		**1667-100** (100 pcs.)		**1668-100** (100 pcs.)	
+ **Slide carrier** (autoclavable)	Slide carrier with ring	Slide carrier for two chambers	Slide carrier with ring	Slide carrier for two chambers	Slide carrier with ring	Slide carrier for two chambers	Slide carrier with ring	Slide carrier for two chambers	Slide carrier with ring	Slide carrier for two chambers	Slide carrier with ring	Slide carrier for two chambers
Cat. No.	**1662**	**1670**	**1662**	**1670**	**1662**	**1670**	**1662**	**1670**	**1662**	**1670**	**1662**	**1670**
+ **Filter cards for 1662**												
Cat. No.	**1675** (200 pcs.)		**1675** (200 pcs.)		**1675** (200 pcs.)		**1676** (100 pcs.)		**1677** (100 pcs.)		**1678** (100 pcs.)	
+ **Filter cards for 1670**												
Cat. No.	**1692** (200 pcs.)		**1692** (200 pcs.)		**1692** (200 pcs.)		**1691** (100 pcs.)		**1694** (100 pcs.)		**1693** (100 pcs.)	

SYSTEM 3 – rotors and equipment

SWING-OUT ROTORS

Swing-out rotor, 4-place For ROTOFIX 32 A | UNIVERSAL 320 / 320 R	
max. RPM | max. RCF	4,000 min⁻¹ | 1,467
max. capacity	4 cyto chambers
run-up | run-down, braked in sec	20 | 25
angle	90°
Cat. No.	**1624**

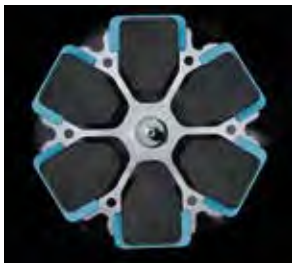
+ **Bucket**

lid	inclusive
Cat. No.	**1680**

Swing-out rotor, 6-place For ROTOFIX 32 A | UNIVERSAL 320 / 320 R	
max. RPM | max. RCF	5,000 min⁻¹ | 1,842
max. capacity	6 cyto chambers
run-up | run-down, braked in sec	20 | 22
angle	90°
Cat. No.	**1626**

+ **Bucket**

lid	inclusive
Cat. No.	**1680**

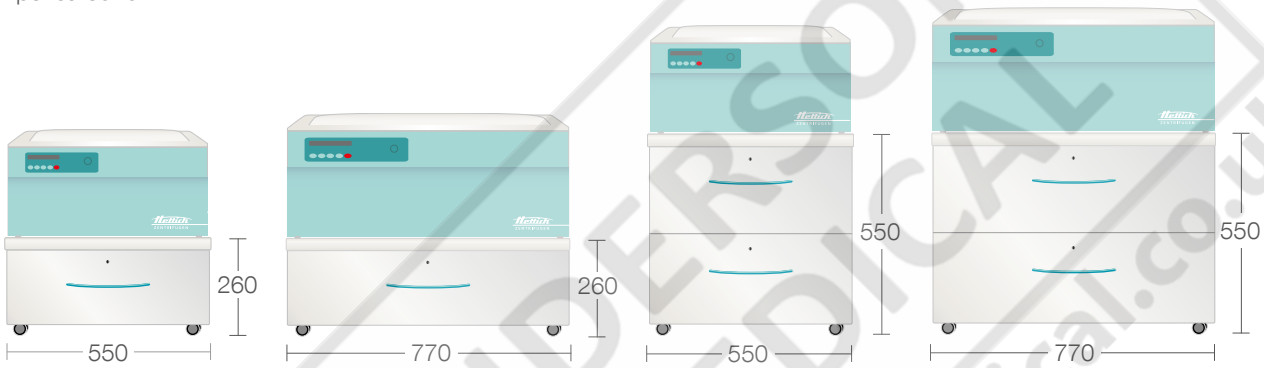


CYTO CHAMBERS

Cyto chambers			
area in mm²	30	60	120
Ø in mm	6.2	8.7	12.4
Cat. No.	**1671-100** (100 pcs.)	**1672-100** (100 pcs.)	**1673-100** (100 pcs.)
+ **Filter cards**			
Cat. No.	**1696** (100 pcs.)	**1697** (100 pcs.)	**1698** (100 pcs.)

ROLLING CABINETS

All rolling cabinets are of sturdy design and feature castors and two locks. Any vibrations of the centrifuge are safely compensated for.



Low and narrow, with one drawer. Depth 650 mm	Low and wide, with one drawer. Depth 650 mm	High and narrow, with two drawers. Depth 650 mm	High and wide, with two drawers. Depth 650 mm
Cat. No. 4612-A	**Cat. No. 4614-A**	**Cat. No. 4613-A**	**Cat. No. 4615-A**

MODEL	ROTOFIX	UNIVERSAL		ROTINA	ROTINA			ROTANTA		ROTOFIX	
Model variant	32 A	320	320 R	380	380 R	420	420 R	460	460 R	46	46 H
4612-A + 4613-A	•	•	•	•	•	•		•		•	•
4614-A + 4615-A							•		•		

• Roling cabinet is compatible for the marked model.

ACCESSORIES FOR CENTRIFUGING BLOOD BAG SYSTEMS

HettLiner
Blood bags can be secured in inserts using HettLiners. After centrifuging, they can be removed by their loops without disturbing the sediment.

Cat. No. 4564

Compensatory weights (set)
If blood bag carriers are not filled to the same weight, then compensatory weights can be used to make up the difference. One set includes:
40 balancing weights, 2 g each;
20 balancing weights, 5 g each;
10 balancing weights, 10 g each;
5 balancing weights, 20 g each;
5 balancing weights, 40 g each

Cat. No. 4566

Balancing inserts*
In case there are not enough blood bag systems to occupy every carrier of the rotor, empty carriers can be filled with balancing inserts. Taring weights supplied with the inserts may be used for fine balancing.

4584-A for insert 4559-A
4587-A for insert 4592-B
4589-A for insert 4516-A

Loading aid
Secure your samples and avoid accidental spillage with the convenient Loading aid for centrifuge inserts. The Hettich Loading aid allows users to confidently hold and manage their samples without the risk of the inserts toppling over.

Cat. No. 4509

* Can only be used for ROTO SILENTA 630 RS inserts.

INCUBATORS

Efficient use of valuable space

HETTCUBE 200 | 200 R
on page 186

HETTCUBE 400 | 400 R
on page 186

HETTCUBE 600 | 600 R
on page 186

THE NEXT HETTCUBE GENERATION

Now with touchscreen and more options

With the new touch screen, HettCube incubators and cooled incubators guarantee intuitive operation with flexible and individual setting options and many new features. The proven combination of natural and forced convection ensures stable and homogeneous temperatures in a much larger part of the interior than conventional incubators. This offers you up to 30% more validated useful space with the same interior space. In addition, the high design of the HettCube incubators requires up to 50% less floor space with comparable capacity.

FEATURES

- Maximal validated usable space on a small footprint
- One-hand operation without additonal inner door
- 4.3 inch touch display for intuitve operation
- Automatic door closure with magnetic seals, door orientation can be easily changed
- Low noise level of ≤ 44 dB(A)
- TÜV certified and factory certificate HettCert with 9 measuring points according to DIN 12880:2007-5 standard
- HettCube without cooling requires only 1°K (1 °C) above stable ambient temperature
- Models with IVD approval
- Inclusive up to 3 standard shelves and 1 HTS shelf with telescopic rail

Additionally for cooled models:

- Temperature drop with holiday function
- Temperature selection monitor class 3.2

FIELDS OF APPLICATION

- Microbiological laboratories
- Hospital
- Pharmaceutical laboratories
- Food analyzing laboratories
- Scientific laboratories in universities
- Cosmetic industry
- Food and beverage
- Agricultural industry
- Life science

IVD CONFORM according to directive 98/79/EC*

DIN EN ISO 9001 HettCert DIN EN ISO 13485

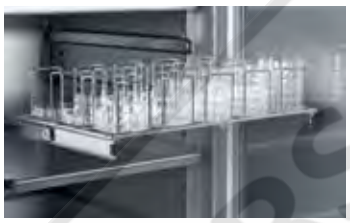
* also available without IVD

TECHNICAL DATA

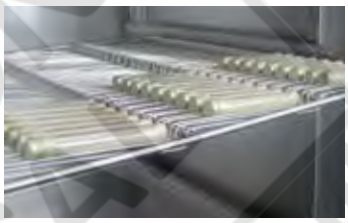
	HettCube 200 | 200 R	HettCube 400 | 400 R	HettCube 600 | 600 R
Temperature range for incubators cooled incubators	1 K above ambient temperature up to +65 °C 0 °C up to +65 °C	1 K above ambient temperature up to +65 °C 0 °C up to +65 °C	1 K above ambient temperature up to +65 °C 0 °C up to +65 °C
Exterior dimensions (without access port and door handle) W x D x H in mm	710 x 825 x 970	710 x 825 x 1425	710 x 825 x 1,990
Interior dimensions W x D x H in mm	535 x 690 x 420	535 x 690 x 850	535 x 690 x 1,415
Internal volume in liters	150	310	520
Validated usable volume in liters	82	199	351
Percentage validated usable volume / internal volume	54 %	64 %	67 %
Footprint in m²	0.6	0.6	0.6
Weight in kg	92 | 103	117 | 128	164 | 175
Number of shelves provided as standard	2 (1 standard + 1 HTS)	3 (2 standard + 1 HTS)	4 (3 standard + 1 HTS)
Temperature fluctuation at +37 °C	± 0.1 K	± 0.1 K	± 0.1 K
Temperature uniformity at +37 °C	± 0.2 K	± 0.2 K	± 0.2 K
Temperature uniformity at +25 °C	± 0.1 K	± 0.1 K	± 0.1 K
Recovery time after door has been opened for 30 s at +37 °C	≤ 3 min	≤ 4.5 min	≤ 5.5 min
Energy consumption at +37 °C	0.038 kWh/h	0.046 kWh/h	0.056 kWh/h
Noise level	≤ 41 dB (A) | ≤ 44 dB (A)	≤ 41 dB (A) | ≤ 44 dB (A)	≤ 41 dB (A) | ≤ 44 dB (A)
Power supply	220 – 240 V 1 ~ / 50 – 60 Hz	220 – 240 V 1 ~ / 50 – 60 Hz	220 – 240 V 1 ~ / 50 – 60 Hz
Cat. No.	**62000 | 62005**	**64000 | 64005**	**66000 | 66005**
Non-IVD version	62001 | 62006	64001 | 64006	66001 | 66006
Other voltages			
100-120 V 1 ~ / 50 – 60 Hz	62000-01 | 62005-01	64000-01 | 64005-01	66000-01 | 66005-01

MORE OPTIONS AND ACCESSORIES

Switchboard



Rack for petri dishes



Rack for Loewenstein application

	Cat. No.
Shelf (Set) I Made of stainless steel, with standard rails, max. load (kg): 50	60001
Shelf (HTS-Set) I Made of stainless steel, with telescopic rails, extendable up to 70 %, max. load (kg): 40	60031
Drawer (HTS-Set), High 30 mm I Made of stainless steel, with telescopic rails, extendable up to 70 %, tightly welded, max. load (kg): 40	60024
Drawer (HTS-Set), High 65 mm I Made of stainless steel, with telescopic rails, extendable up to 70 %, tightly welded, max. load (kg): 40	60025
Drawer (HTS-Set), High 105 mm I Made of stainless steel, with telescopic rails, extendable up to 70 %, tightly welded, max. load (kg): 40	60026
Rack (HTS-Set) I For Petri dishes, stainless steel, with telescopic rails, extendable up to 70 %, Petri dishes Ø (mm): 90, max. load (pcs): 90	60038
Rack (Set) I For Petri dishes, stainless steel, with standard rails, Petri dishes Ø (mm): 90, max. load (pcs): 90	60039
Rack I For Petri dishes, stainless steel, Petri dishes Ø (mm): 90, max. load (pcs): 90	60040
Rack (HTS-Set) I For inclined storage of cultures (Loewenstein), stainless steel, with telescopic rails, extendable up to 70 %, inclination angle: 5°, tube Ø (mm): 15-20, max. load (pcs): 81tube	60036
Rack (Set) I For inclined storage of cultures (Loewenstein), stainless steel, with standard rails, inclination angle: 5°, tube Ø (mm): 15-20, max. load (pcs): 81 tubes	60037
Rack I For inclined storage of cultures (Loewenstein), stainless steel, inclination angle: 5°, tube Ø (mm): 15-20, max. load (pcs): 81 tubes	60041
Frame L, 16-place I Made of stainless steel, for inclined storage of cultures, tube Ø (mm): 15-20, Tube length (mm): 100-125, inclination angle 5° or 20 °	60027
Frame XL, 16-place I Made of stainless steel, for inclined storage of cultures, tube Ø (mm): 15-20, Tube length (mm): 126-170, inclination angle 5° or 20 °	60028
Switchboard I 4-fold socket strip, as a unit controllable via display, on the back of the device	60521
Independent PT 100 sensor I For independent temperature measurement, four-wire system, temperature values output with analogue output 4-20 mA on the back of the device	60503
Passive dehumidification I For individual or timed opening of a dehumidification module via the touchscreen	60042
Service: Assembly of the Stacking kit for the HettCube 200 I 200 R	60043
Service: Changing the door hinge	60044
Glass door I All-glass outer door, for HettCube 200 I 200 R	60030
Glass door I All-glass outer door, for HettCube 400 I 400 R	60029
Glass door I All-glass outer door, for HettCube 600 I 600 R	60013
Access port I Ø (mm): 22, Foam stoppers	60006
Access port I Ø (mm): 42, Foam stoppers	60007
Access port I Ø (mm): 67, Foam stoppers	60008
Stacking kit I For safe stacking of two HettCubes 200 I 200 R	60009
Rolling cabinet I Lockable, with one drawer, incl. lockable castors, WxDxH (mm): 770x800x550, for HettCube 200 I 200 R	60010
USB Port Lock (Set) I For securing the USB-A interface. Set consisting of 10 securing clips and 1 USB key tool.	60525
Parameter for continuous cooling operation I For storing samples below 15 °C for more than 2 weeks	60526

EXTENSIVE STANDARD EQUIPMENT

4.3 inch touchscreen

Shelf (HTS-Set) with telescopic rails

Access port on rear panel Ø 42 mm

4.3 inch touchscreen:
- Target / actual display
- Setting accuracy 0.1 ° C
- Real-time calendar
- Timer
- Language options (English, German, French and Spanish)
- Temperature diagram in 3 zoom levels (up to 4 weeks)
- Power failure scenarios
- Door alarm individually adjustable
- Log (door openings, alarms and operating hours)
- PIN lock
- Up to 99 program functions (Start/Stop, Period, Timer at start, Timer at temperature, ...)
- Temperature selection monitor class 3.1 for all models

Additionally with refrigerated devices
- Temperature reduction with holiday function
- Temperature selection monitor class 3.2 for all refrigerated models
- Programming external devices via switchboard (option)

Control panel and door lockable simultaneously

USB service interface

Bushing on rear panel Ø 42 mm

Potential-free alarm output

Interior of high-quality stainless steel (W-St 1.4301 (ASTM 304))

In addition you get for free ...

Up to 3 Shelf standard shelves of stainless steel (depending on model size)

HTS shelf of stainless steel with telescopic rails

Factory certificate (HettCert) – 9 points measurement analog to DIN 12880: 2007-05

Rebates available for unused shelves*

* Choose other shelves / drawers as standard, we credit you the price of unused standard inserts.

EVERYTHING UNDER CONTROL

INTUITIVE OPERATION WITH THE NEW TOUCHSCREEN

Get clear and concise information on your incubation process – at a glance! With the new 4.3 inch touchscreen and intuitive menu dashboard, you can easily view the status of the device, as well as any alarms and events in the past 4 weeks. Any event or irregularity (such as door openings, tolerance band violations or power failures) are electronically documented in the logbook.

EASY WEEKLY PROGRAMMING

The user-friendly touchscreen allows for uncomplicated adjustment of weekly programming without additional software – directly on the device. The holiday function allows you to define additional temperature drops for your days off already months in advance. Easily determine the start time or the time period as well as the frequency of your Temperature reduction in a real-time calendar.

SAFETY FOR YOUR SAMPLES

FLEXIBLE SETTINGS

Various events and alarm functions are individually adjustable. For example: Deviations from the interior temperature can be limited individually over tolerance range limits or fixed via independent temperature safety device of Classes 3.1 and 3.2. Class 3.2 is already included in the standard version of all refrigerated HettCubes.

PROCESS RELIABILITY EVEN IN THE EVENT OF A POWER FAILURE

With the new HettCube generation, you can keep control over your samples even in the event of a power failure. Define by yourself two different settings options how your HettCube‘s should behave in the event of a power failure.

Setting the period
By default, the device automatically restarts at the point where the power failed. But Users can also define the acceptable length of time in the event of a power failure. Once power is restored, the HettCube will verify whether this pre-set period has been exceeded. Should this be the case, the settings will be paused and the incubator will automatically move to a Standstill (Safe) Mode. Otherwise, the unit will continue with normal operation and user settings.

Setting the tolerance band
Tolerance band limits and holding temperature are individually configurable. After a power failure, the HettCube checks whether there is a tolerance band violation. The HettCube then automatically adjusts to the previous configured holding temperature. If there is no violation of the tolerance band the HettCube resumes its work.

PERFECT CONDITIONS

HettCube incubators combine the advantages of natural and forced convection to provide a stable and uniform environment for cultures. The fan is housed outside of usable space, providing higher throughputs and limiting airflow inside the incubator. Temperature is primarily maintained by radiated heat to ensure even temperature distribution and to prevent hot spots. This yields optimum growth conditions and considerably reduces the potential of samples drying out.

MAXIMUM USABLE SPACE – SMALLEST FOOTPRINT

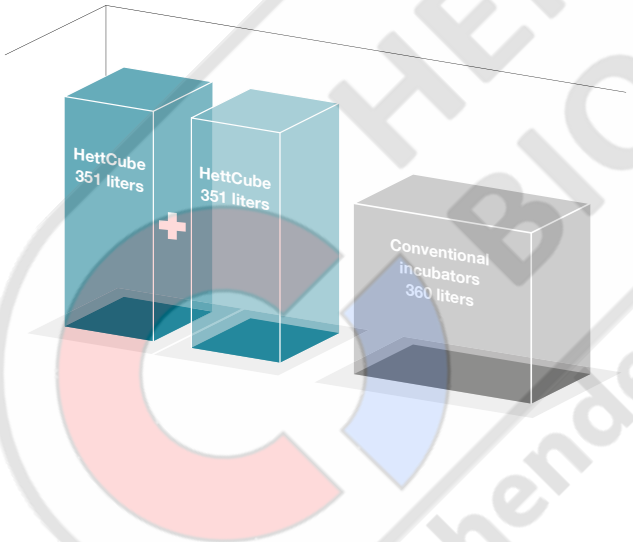
30 % MORE VALIDATED USABLE SPACE

Due to their gentle air flow and edge-to-edge temperature uniformity, HettCube incubators provide up to 30 % more validated usable space* than a traditional incubator with the same internal volume.

*in accordance with DIN 12880:2007-05

520 liters of interior space

351 liters of validated usable space*



50 % SMALLER FOOTPRINT

The HettCube's upright design requires up to 50 % less floor space than a traditional incubator with similar capacity. The space saving footprint allows you to nearly double your capacity by accommodating two HettCube incubators within the same footprint as one conventional incubator.

HettCube
702 liters of validated usable space with the same footprint

Conventional incubators
360 liters of validated usable space

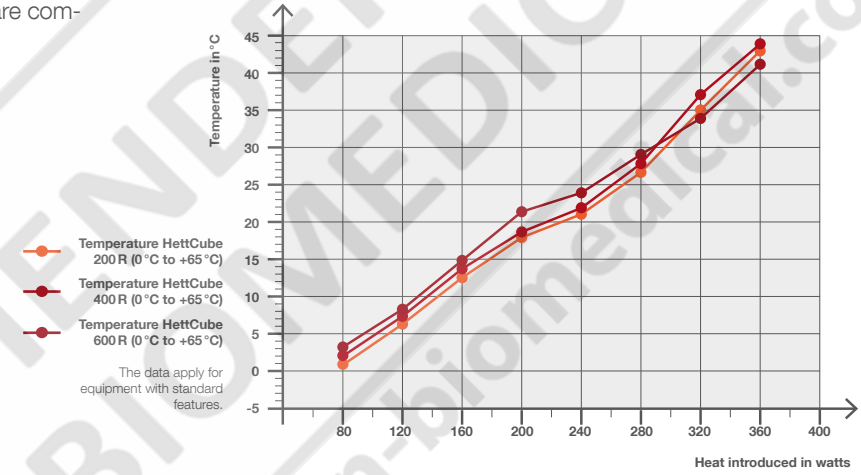
HettCube	Conventional incubators
Gentle air flow + High-performance insulation + Small footprint =	Strong air flow + Bulky insulation + Large footprint =
Maximum loading capacity + Cost savings per m^2 laboratory space	Low loading capacity + Higher costs per m^2 laboratory space

RELIABLE COMPENSATION OF TEMPERATURE DIFFERENCES BETWEEN THE INSIDE AND OUTSIDE

HettCube models react to changes in ambient conditions. Temperature fluctuations outside the incubator and energy introduced into the usable space by external equipment are compensated for immediately and actively.

Heat compensation of the HettCube 200 R / 400 R / 600 R

Lowest attainable temperature values upon introduction of equipment with different heat outputs.

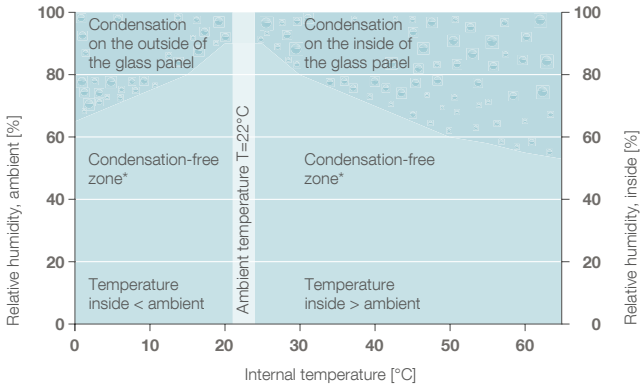


The data apply for equipment with standard features.

HETTCUBES WITH GLASS DOOR

The optional glass door enables users to check on their cultures without opening the door.

Condensation diagram for HettCubes size 200 R/400 R/600 R with glass door at an ambient temperature of +22°C



*Condensation possible in the boundary areas

LOW ENVIRONMENTAL IMPACT

Minimal operating costs

Our HettCubes heat or cool only when needed. At an operating temperature of 37 °C a HettCube incubator consumes less than 0.056 kWh/h. This brings average savings of up to 450 Euro annually*. Therefore, investment costs are recouped within shorter time. The use of a HettCube incubator saves on average up to 940 kg of CO_2 emissions annually*.

Additionally: The insulation of the HettCubes consists of water-driven foam, which contains no fluorinated hydrocarbons. Their GWP value (Global Warming Potential) is a thousand times lower than that of conventional insulating foams.

*Assuming 24h operation 365 days a year. The basis for calculation is € 0.29 per kWh/h – the average price of electricity in Germany in 2018 and 0.6 kg CO2 per kWh/h.

First-class isolation

The advanced control system and insulation mean that the incubator will maintain a set temperature even if there is only a difference of 1 K (°C) from the ambient temperature. This allows an uncooled HettCube incubator to be used in situations in which a comparable incubator would require cooling.

PROVEN QUALITY

Certifications

Hettich products comply with all applicable safety regulations, carry the TÜV seal and are compliant with IVD. Hettich manufactures according to the applicable quality and environmental management systems, including ISO 9001, ISO 13485 and ISO 14001.

Each HettCube is temperature validated before delivery by means of the 9 point measurement and receives a HettCert factory certificate, included free of charge. All temperature data are determined according to DIN 12880: 2007-5.

PRODUCT VIDEOS

Would you like to learn more about this product? Scan the QR Code to visit our YouTube channel:

www.youtube.com/hettichlabtechnology

ENVIRONMENTAL PRODUCTS

Testing for Food, Agro, Pharma & Life Science

Are you looking for climate control equipment? We are specialized in the design, manufacture, installation and maintenance of such equipment. Hettich delivers standard equipment which can be adapted to your application. The product range includes all forms of simulation with the ability to control such variables as temperature, humidity and light.

For further information, please visit the website www.hettichbenelux.com or give us a call.

10

PLANT GROWTH CABINETS

STABILITY CABINETS

CONTROL PANELS

The control panels from Hettich are easy to operate and specifically tailored to users' needs. Entry of the parameters is fast, precise and convenient by way of an adjuster knob and / or selector keys on a foil keypad. The intuitive display shows the actual values in digital format while the centrifuge is running.

E CONTROL PANEL

EBA 270

ROTOFIX 32 A

The E(conomy) control panel is fitted in the EBA 270 and ROTOFIX 32 A models. The required centrifugation parameters can be entered quickly and easily on the user-friendly keypad:

DISPLAY

RPM	Speed indication. Entry in increments of 100.
t	Time indication. Entry in minutes. max. 99 min.

KEYPAD

▲	Increases the relevant value.
▼	Decreases the relevant value.
PULSE	For short centrifugation steps.
OPEN	Opens the lid (EBA 270).
START	Starts centrifugation.
STOP	Stops centrifugation manually
RCF	Switches from RPM to RCF display (ROTOFIX 32 A).

E PLUS CONTROL PANEL

The models EBA 200, EBA 200 S, HAEMATOKRIT 200 and MIKRO 185 are operated with the E Plus control panel. In contrast to the E control panel this allows entry of the speed (RPM) or the relative centrifugal force (RCF).

DISPLAY

RCF	Relative centrifugal force.
RPM	Speed indication. Entry in increments of 10.
t/min:s	Centrifugation time (max. 99 min : 59 sec).

KEYPAD

▲	Increases the relevant value.
▼	Decreases the relevant value.
RCF	Switches from RPM to RCF display. Entry of the RCF in increments of 1. Input of rotor radius in mm in RCF mode.
SELECT	Guides the user through the menu options.
START	Starts centrifugation.
PULSE	For short centrifugation steps.
STOP	Stops centrifugation manually.
OPEN	Opens the lid at standstill.

M CONTROL PANEL

Centrifuge models EBA 280 and EBA 280 S are equipped with the M control panel. The parameters are selected with the Select key and the desired values are set using arrow keys and stored by pressing the Start/Pulse key.

DISPLAY

PROG	Program number. Ten programmable memories are available.
>RCF<	Relative centrifugal force.
RPM	Speed indication. Entry in increments of 10.
t/min:s	Centrifugation time (max. 99 min : 59 sec).

KEYPAD

PROG	Selects the program menu to call up or store programs.
RCF	Switches from RPM to RCF display. Entry of the RCF in increments of 1. Entry of the centrifuging radius in mm.
SELECT	Guides the user through the menu options.
▲	Increases the relevant value.
▼	Decreases the relevant value.
START	Starts centrifugation.
PULSE	For short centrifugation steps.
STOP	Stops centrifugation manually.
OPEN	Opens the lid at standstill.

A LED IN THE KEYBOARD LIGHTS UP:

- when the RCF display is activated (RCF key)
- during centrifugation (Start/Pulse key)
- during the braking period (Start/Open key – LED at the right)
- if the lid can be opened (Start/Open key – LED at the left)

N PLUS CONTROL PANEL

The MIKRO 200 / 200 R. MIKRO 220 / 220 R. UNIVERSAL 320 / 320 R and ROTOFIX 46 / 46 H models are quick and easy to operate using this variant of the N control panel. The parameters are selected with the Select key. An adjuster knob is used to set the values. and the settings are stored by pressing the Start/Impulse key.

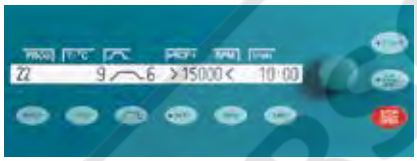
DISPLAY

P	Program number. Four (MIKRO 200 / 200 R) or 10 (MIKRO 220 / 220 R. UNIVERSAL 320 / 320 R. ROTOFIX 46 / 46 H) programmable memories are available.
T/°C	Temperature of refrigerated and heatable centrifuges. The temperature of the refrigerated models is infinitely variable between -20 °C and +40 °C (MIKRO 220 R. UNIVERSAL 320 R) or between -10 °C and +40 °C (MIKRO 200 R). Model ROTOFIX 46 H can be heated up to +90 °C.
>RCF<	Relative centrifugal force.
RPM	Speed indication. Entry in increments of 10.
t/min	Centrifugation time (max. 99 min : 59 sec).
⎽╱‾	Entry of the acceleration ramp 1 – 9
‾╲⎽	Entry of the braking ramp 1 – 9

KEYPAD

❄	Pre-cools the rotor chamber (MIKRO 200 R. MIKRO 220 R and UNIVERSAL 320 R) to the required temperature.
⎓	Heats the rotor chamber of the ROTOFIX 46 H to the required temperature.
RCF	Switches from RPM to RCF display. Entry of the RCF in increments of 10. Input of rotor radius in mm in RCF mode.
SELECT	Guides the user through the menu options.
START	Starts centrifugation.
PULSE	For short centrifugation steps.
STOP	Stops centrifugation manually.
OPEN	Opens the lid at standstill.

C CONTROL PANEL



The advanced C control panel significantly facilitates the daily laboratory routine. Parameter selection is done via the use of symbol keys. Values are set with the control knob. and recorded by pressing the Start key. The temperature in the refrigerated ROTINA 380 R. ROTINA 420 R, ROTANTA 460 R and ROTANTA 460 Robotic centrifuges can be set in either Celsius (°C) or Fahrenheit (°F) degrees.

DISPLAY

PROG	Entry and recall of the program number. 98 programs can be stored.
T/°C	Entry of the temperature from -20 °C to +40 °C or -4 °F to +104 °F in increments of 1 with refrigerated models.
⎽╱‾╲⎽	Entry of the run-up time in ramps 1 – 9 or in min : sec. Entry of the run-down time in ramps R 1 – 9 and B 1 – 9 or in min : sec. Also unbraked run-down or a brake force cut-off speed can be selected.
RCF	Entry of the relative centrifugal force in increments of 1. Entry of the centrifuging radius (RAD) in mm.
RPM	Entry of the speed in increments of 10.
TIME	Entry of the centrifugation time (max. 99 h : 59 min : 59 sec) or continuous operation.

KEYPAD

START	Starts centrifugation. Starts short centrifugation. Stores entries and changes.
❄	Starts pre-cooling program PREC.
STOP	Stops centrifugation manually.
OPEN	Opens the lid at standstill.

Centrifuges with C control panel permit the centrifugation time to be switched from „at start“ (commencing upon start) to „at speed“ (start when the set speed has been reached).

OPTIONS

PROGRAM INTERLOCKING: to combine several centrifugation runs.

S CONTROL PANEL

This special-class control panel is standard with the ROTIXA 500 RS and ROTO SILENTA 630 RS floorstanding centrifuges.

DISPLAY

PROG-Nr	Program number. 89 programmable memories are available.
T/°C	Temperature.
PROFIL	Run-up and run-down profile.
n/min-1	Speed indication.
t/min:sec	Centrifugation time (max. 999 min: 59 sec).

KEYPAD

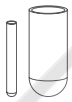
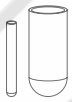
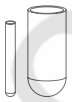
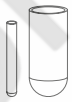
STO	Stores the program.
RCL	Calls up the selected program.
PROG	Selects the program menu.
▢	Entry of the temperature from -20 °C to +40 °C in increments of 1 °C. Entry of the rotor radius in mm in RCF mode
RCF	Switches from RPM to RCF display. Entry of the RCF in increments of 1.
⎽╱‾	Entry of the run-up time in ramps 1 – 9 or in min : sec.
‾╲⎽	Entry of the run-down time in ramps R 1 – 9 and B 1 – 9 or in min : sec. Also unbraked run-down or a brake force cut-off speed can be selected.
∫ RCF	The integral over the RCF indicates the overall RCF acting on the centrifuged material during the running time so far.
n	Entry of the speed in increments of 10.
t	Entry of the centrifugation time (max. 999 min : 59 sec) or continuous operation.
START	Starts centrifugation.
STOP	Stops centrifugation manually.

OPTIONS

PROGRAM INTERLOCKING:
to combine several centrifugation runs.

DATA REPORT SYSTEM:
For detailed information on this subject. please refer to the HettInfo section on pages152-153.

CENTRIFUGE CAPACITY GUIDE

Commonly-used tubes at a glance										
Volume in ml	0.2 - 2	8 x 0.2	0.5	15	50	100	250	1.6 - 7	4 - 10	15
W x D x H in mm										
Ø x L in mm	6 - 11 x 38	-	11 x 36	17 x 100	34 x 100	40 x 115	65 x 115	13 x 75 / 100	16 x 75 / 100	17 x 120
Centrifuge models	Maximum number of tubes per centrifuge									
MANUAL CENTRIFUGE	-	-	-	4	-	-	-	4	4	4
EBA 200 I EBA 200 S	-	-	8	8	-	-	-	8	- / 8	4
EBA 270	-	-	6	6	-	-	-	6	6	-
EBA 280 I EBA 280 S	-	-	12	12	6	-	-	12	8 / 12	6
MIKRO 185	24	-	12	-	-	-	-	-	-	-
MIKRO 200 I 200 R	30	-	15	-	-	-	-	-	-	-
MIKRO 220 I 220 R	48 (60)	-	15	12	6	-	-	12	12	6
ROTOFIX 32 A	(36)	-	24	32	6	4 (44 x 100 mm)	-	40 / 32	28 / 32	32
UNIVERSAL 320 I 320 R	30	24 x 8	15	32	6	4 (44 x 100 mm)	-	40 / 32	28 / 32	32
ROTINA 380 I 380 R	30	-	15	52	12	4 (44 x 100 mm)	4	64 / 76	52	36
ROTINA 420 I 420 R	30 (96)	-	15	72	16	12	4	104/84	72	52
ROTANTA 460 I 460 R	30 (224)	-	15	148	16	12	6	196	148	96
ROTOFIX 46	-	-	-	48	8	4	4	-	-	28
ROTANTA 460 RC I 460 RF	30 (224)	-	15	148	16	12	6	196	148	96
ROTIXA 500 RS	(336)	-	-	168	24	16	6	200	168	112
ROTO SILENTA 630 RS	-	-	-	180	36	24	-	180	180	138
MIKRO 220 Robotic	24 / 12	-	-	-	-	-	-	-	-	-
ROTINA 380 I 380 R I 380 RC Robotic				on request				48	48	on request
ROTANTA 460 Robotic				on request				80	80	on request
ROTOLAVIT II	-	-	-	24 x 5 ml	-	-	-	-	-	-










										Maximum performance of the centrifuges	
50	250 / 500	250 / 290	650 / 750	1,000	2,000	MTP	500	-	-		
					150 x 100 x 180	128 x 15 x 86					
29 x 115 / 115	60 x 162 / 96 x 147	61 x 122 / 62 x 137	97 x 139 / 152	96 x 176			4-place	-	-		
Maximum number of tubes per centrifuge										max. RCF	max. RPM min^{-1}
-	-	-	-	-	-	-	-	-	-	1,298	3,000
-	-	-	-	-	-	-	-	-	-	3,461 | 6,153	6,000 | 8,000
-	-	-	-	-	-	-	-	-	-	2,254	4,000
3 / -	-	-	-	-	-	-	-	-	-	4,146 | 5,071	6,000
-	-	-	-	-	-	-	-	-	-	18,845	14,000
-	-	-	-	-	-	-	-	-	-	21,382	15,000
3 / -	-	-	-	-	-	-	-	-	-	31,514	18,000
8	-	-	-	-	-	-	-	6	12	4,226	6,000
8	-	4 x 200 ml	-	-	-	10	-	6	12	24,900	16,000
16	-	4	-	-	-	12	-	8	-	24,400	15,000
20	-	4	4 x 600 ml	-	-	16	-	8	-	24,400	15,000
40 / 28	4	8	4	-	-	24	4 x 450 ml	16	-	24,400	15,000
8	-	4	-	-	-	-	-	-	-	3,095	4,000
40 / 28	4	8	4	-	-	24	4 x 450 ml	16	-	24,400	15,000
40	4	6	4	4	-	24	4	12	-	18,038	11,500
48 / 36	6	6	6	6	6	-	12	-	-	6,520	6,000
-	-	-	-	-	-	-	-	-	-	18,516	13,000
16			on request			6		on request		4,696	5,100
24			on request			12		on request		6,446	6,200
-	-	-	-	-	-	-	-	-	-	1,438	3,500

FEATURES OF THE CENTRIFUGES

	metal housing	plastic housing	metal lid	viewing port in the lid	lid locking and holding	one-hand lid lock	twist lock	powered lid-locking	lid dropping protection	emergency lid lock release	stainless steel chamber	light alloy chamber
EBA 200 I 200 S		•	•	•	•	•			•	•		•
EBA 270		•	•	•	•	•			•	•	•	
EBA 280 I 280 S		•	•	•	•	•			•	•	•	
HAEMATOKRIT 200		•	•	•	•	•			•	•		•
MIKRO 185		•	•	•	•	•			•	•		•
MIKRO 200	•		•	•	•	•		•	•	•	•	
MIKRO 200 R	•		•	•	•	•		•	•	•	•	
MIKRO 220	•		•	•	•	•		•	•	•	•	
MIKRO 220 R	•		•	•	•	•		•	•	•	•	
ROTOFIX 32 A	•		•	•	•	•			•	•	•	
UNIVERSAL 320	•		•	•	•	•		•	•	•	•	
UNIVERSAL 320 R	•		•	•	•	•		•	•	•	•	
ROTINA 380	•		•	•	•	•		•	•	•	•	
ROTINA 380 R	•		•	•	•	•		•	•	•	•	
ROTINA 420	•		•	•	•	•		•	•	•	•	
ROTINA 420 R	•		•	•	•	•		•	•	•	•	
ROTANTA 460 I 460 R	•		•	•	•	•		•	•	•	•	
ROTOFIX 46	•		•	•	•		•		•	•	•	
ROTOFIX 46 H	•		•	•	•		•		•	•	•	
ROTANTA 460 RC I 460 RF	•		•	•	•	•		•	•	•	•	
ROTIXA 500 RS	•		•	•	•	•		•	•	•	•	
ROTO SILENTA 630 RS	•		•	•	•	•		•	•	•	•	
ROTOLAVIT II	•		•	•	•	•			•	•		
Robotic centrifuges	Details on our models MIKRO 220 Robotic, ROTINA 380, 380 R, 380 RC Robotic and ROTANTA 460 Robotic											

#) Adjustable temperature range MIKRO 200 R: -10 °C to +40 °C.

air cooling	cooling (20 °C to +40 °C)	heating (to +90 °C)	automatic rotor recognition	rapid rotor chamge system	brushless drive	control panel	error display	imbalance switch-off	data report system (option)	also available in 115 V / 60 Hz	
•					•	E plus	•	•		•	EBA 200 I 200 S
•					•	E	•	•		•	EBA 270
•			•	•	•	M	•	•		•	EBA 280 I 280 S
•					•	E plus	•	•		•	HAEMATOKRIT 200
•					•	E plus	•	•		•	MIKRO 185
•					•	N plus	•	•		•	MIKRO 200
	• #)				•	N plus	•	•		•	MIKRO 200 R
•			•		•	N plus	•	•		•	MIKRO 220
	•		•		•	N plus	•	•		•	MIKRO 220 R
•			•		•	E	•	•		•	ROTOFIX 32 A
•			•		•	N plus	•	•		•	UNIVERSAL 320
	•		•		•	N plus	•	•		•	UNIVERSAL 320 R
•			•		•	C	•	•		•	ROTINA 380
	•		•		•	C	•	•		•	ROTINA 380 R
•			•		•	C	•	•		•	ROTINA 420
	•		•		•	C	•	•		•	ROTINA 420 R
• 460	• 460 R		•		•	C	•	•		•	ROTANTA 460 I 460 R
•			•		•	N plus	•	•		•	ROTOFIX 46
		•	•		•	N plus	•	•		•	ROTOFIX 46 H
	•		•		•	C	•	•		•	ROTANTA 460 RC I 460 RF
	•		•		•	S	•	•	•		ROTIXA 500 RS
	•		•		•	S	•	•	•		ROTO SILENTA 630 RS
•					•	Touch	•	•		•	ROTOLAVIT II
are available on our website www.hettichlab.com											Robotic centrifuges

MODEL VARIANTS FOR SPECIAL REQUIREMENTS

The following variants of the refrigerated models UNIVERSAL 320 R, ROTINA 380 R, ROTINA 420 R, ROTANTA 460 R / RC / RF, ROTIXA 500 RS and ROTO SILENTA 630 RS are available:

Variants with connection for nitrogen (N2) flushing:
For centrifugation of reactive substances or substances which are unstable in aerial oxygen. If required, customers should install an oxygen concentration monitor.

Heating/cooling variants (H/C):
For applications demanding temperatures above 40 °C, such as mineral oil testing according to ASTM, material endurance tests, etc.

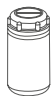
The heating/cooling variants of the UNIVERSAL 320 R feature no cooling unit and no built-in heater. An external refrigerated/heating circulator must be provided by the customer. Depending on the circulator performance, the centrifuge is able to heat/refrigerate in a range from 0 °C to +90 °C.

The floorstanding ROTO SILENTA 630 RS and ROTIXA 500 RS centrifuges are also available as variants with internal cooling unit or for connection to external cooling units, and as GMP versions.

	Variant	Power supply*	Frequency	Cat. No.
UNIVERSAL 320 R	N_2 flushing	200 – 240 V	50 Hz	**1406-20**
		240 V	60 Hz	
UNIVERSAL 320 R	N_2 flushing	115 – 127 V	60 Hz	**1406-21**
UNIVERSAL 320 R**	H/C to +90 °C	200 – 240 V	50 – 60 Hz	**1406-50**
UNIVERSAL 320 R**	H/C to +90 °C	100 – 127 V	50 – 60 Hz	**1406-51**
UNIVERSAL 320 R**	H/C to +90 °C plus N_2 flushing	200 – 240 V	50 – 60 Hz	**1406-70**
UNIVERSAL 320 R**	H/C to +90 °C plus N_2 flushing	100 – 127 V	50 – 60 Hz	**1406-71**
ROTINA 380 R	H/C to +90 °C	200 – 240 V	50 – 60 Hz	**1706-50**
ROTINA 420 R	N_2 flushing	200 – 240 V	50 Hz	**4706-20**
ROTINA 420 R	H/C to +90 °C	200 – 240 V	50 Hz	**4706-50**
ROTANTA 460 R	N_2 flushing	200 – 240 V	50 Hz	**5660-20**
ROTANTA 460 R	H/C to +90 °C	200 – 240 V	50 Hz	**5660-50**
ROTANTA 460 R	H/C to +90 °C	100 – 127 V	60 Hz	**5660-51**
		100 V	50 Hz	
ROTANTA 460 R	H/C to +90 °C plus N_2 flushing	200 – 240 V	50 Hz	**5660-70**
ROTANTA 460 RC	H/C to +90 °C	200 – 240 V	50 Hz	**5670-50**
ROTANTA 460 RF	H/C to +90 °C	200 – 240 V	50 Hz	**5675-50**
ROTIXA 500 RS	H/C to +60 °C	230 – 240 V	50 Hz	**4950-50**
ROTIXA 500 RS	GMP, internal cooling unit with water-cooled condenser	220 – 240 V	50 – 60 Hz	**4950-80**
ROTO SILENTA 630 RS	H/C to +90 °C	400 V 3~ +N	50 – 60 Hz	**5005-50**
ROTO SILENTA 630 RS	GMP, internal cooling unit with water-cooled condenser	400 V 3~ +N	50 – 60 Hz	**5005-80**
ROTO SILENTA 630 RS	GMP, external cooling unit	400 V 3~ +N	50 – 60 Hz	**5005-90**

*) Other voltages on request.
**) An external refrigerated / heating circulator must be provided by the customer.

AVAILABLE TUBES

	Capacity in ml	Dimensions Ø x L in mm	Description	Cat. No.
	200	56 x 112	bottle, PP, with screw cap	0555
	250	61 x 122		5127
	600	93 x 134		0551
	650	97 x 139		0554
	750	97 x 152		0512
	1.000	96 x 176		4239
	450	97 x 110	bucket, PP	4447
	750	96 x 135		4234-A
	1,000	98 x 138	bucket, stainless steel, with screw cap	4255
	2,000	150 x 100 x 180 WxDxH	bottle, PP, with screw cap	0550
	30	24 x 151	chrome bath tube with stopper	0508
				0529
	30	44 x 105	chrome bath tube	0534
		-	rubber stopper for 0534	0535
	25	24 x 146.5	Schlenk tube	0532
	50	38 x 148.5		0533
	100	37 x 200	ASTM tube (petroleum tester), glass, calibrated	0531 conical
	100	58 x 161		0528 pear-shaped

	Capacity in ml	Area in mm² / (L x W) in mm	Description	Cat. No.
	0.5	28.3	cyto chambers, disposable	1531 (50 pcs.)
	0.2	28.3		1532 (50 pcs.)
	0.5	28.3	cyto chambers (re-usable)	1538 (12 pcs.)
	6	13.4 x 22		1532 (12 pcs.)
	1	30	cyto chambers, single (re-useable)	1663
	2	60		1664
	4	120		1665
	8	240		1666
	3 x 2	3 x 60	cyto chambers, multiple (re-useable)	1667
	4 x 1	4 x 30		1668
	1	30	cyto chambers	1671
	2	60		1672
	4	120		1673

Please make sure not to exceed the tubes' max. permissible RCF.

The capacity of the vessels is given as the nominal volume according to the manufacturer.

The filling volume can be different.

The chrome bath tubes 0508, 0529 and 0534 may not be centrifuged with the stopper. The stopper only serves to close the tube for agitating or mixing.

CERTIFICATES / REGISTRATIONS

Hettich centrifuges and incubators fulfill all applicable European directives that apply to you. Every work step is subject to strict controls and documentation. The company is ISO 9001, ISO 13485 and ISO 14001 certified. Hettich products are manufactured with care and responsibility, giving them a worldwide reputation for safety and reliability.

PRODUCT REGISTRATIONS

	IVD-conform Medical Device In-Vitro Diagnostic (IVD) according to EU Directive 98/79/EC	Medical device Medical device according to EU Directive 93/42/EEC	General laboratory equipment General laboratory equipment according to Directive 2014/35/EU for electrical equipment
EBA 200 I 200 S	•		
EBA 270	•		
EBA 280 I 280 S	•		
HAEMATOKRIT 200	•		
MIKRO 185	•		
MIKRO 200 I 200 R	•		
MIKRO 220 I 220 R	•		
ROTOFIX 32 A	•		
UNIVERSAL 320 I 320 R	•		
ROTINA 380 I 380 R	•		
ROTINA 420 I 420 R	•		
ROTANTA 460 I 460 R		•	
ROTOFIX 46 I 46 H			•
ROTANTA 460 RC I 460 RF		•	
ROTIXA 500 RS		•	
ROTO SILENTA 630 RS		•	
ROTOLAVIT II	•		
HETTCUBE 200 I 200 R	•		•
HETTCUBE 400 I 400 R	•		•
HETTCUBE 600 I 600 R	•		•

COMPANY CERTIFICATIONS

ISO 9001
Quality management system according to ISO 9001

ISO 14001
Environmental management system according to ISO 14001

EN ISO 13485
Quality management system according to ISO 13485

PRODUCT CERTIFICATIONS

TÜV SÜD certification mark
Tested device safety in accordance with the high technical requirements in Europe, U.S.A. and Canada

Factory certificate HettCert
Device calibration with the high requirements of Hettich according to ISO 9001 and ISO 13485

Authorized Economic Operator
We are able to offer expedited shipments and customs clearance.

»Made in Germany«
All Hettich products are designed, developed and produced in Germany

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QPS certification mark			Made in Switzerland
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CATALOG EXPLANATION

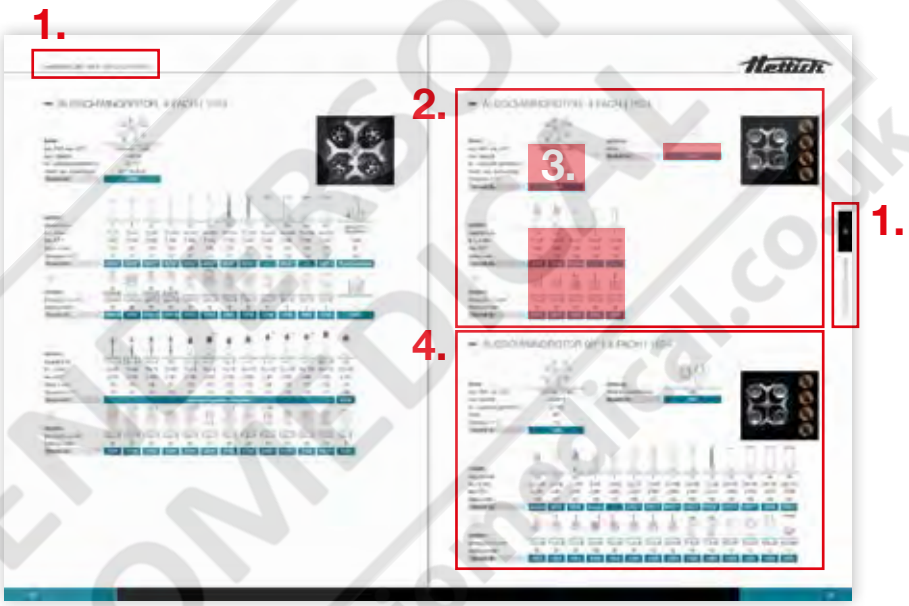
Layout

1. Navigation:
   Header + sheet index

2. Rotor
   + Bucket
   + Lid
   + Adapter
   + Vessel
   + Thumbnail

3. All specifications apply to the possible combinations shown

4. A maximum of two rotors is shown per page



Shortcuts

Vessels:

CP	=	Culture Plate
DWP	=	Deep Well Platte
MS	=	Micronic System
MTP	=	Microtitre Plate
QP	=	Filter Plate
PA	=	Polyamide
PC	=	Polycarbonate
PE	=	Polyethylene
PP	=	Polypropylene

Device name:

C	=	C after the model name stands for underbench centrifuge
F	=	F after the model name stands for floorstanding centrifuge
H	=	H after the model name stands for heated centrifuge
R	=	R after the model name stands for refrigerated centrifuge
S	=	S after the model name stands for S control panel in the centrifuge. (Except EBA 200 S, EBA 280 S).

Angle rotor | Angle rotors are ideally suited for use at high speeds. Time can be saved by tilting the tubes and accelerating the separation.

Calculation of centrifugal force | RCF = $(n/1000)^2$ x r x 1,118 | n = Rotation in min-1 (RPM) | r = Radius in mm

Capacity of the centrifuge | An overview of all capacities can be found on page 200.

Control panel | Find an overview of all control panels on page 198.

Disk Rotor | This type of angle rotor was specially developed for the centrifugation of capillaries. Significant results are generated in the 90° angle and can be displayed directly in the rotor. With the help of an evaluation cover the results can be read easily and safely.

Download Center | The Download Center on our website allows you to access the most up to date documents including catalogs, brochures, data sheets and certificates. Please visit: www.hettichlab.com/downloadcenter

Drum rotor | A extended form of the angle rotor is the drum rotor. With high rotational speed and high capacity, it is the ideal choice to create sediment at the bottom of the vessel.

Environment | As an ISO 14001 certified company, sustainability and the protection of the environment are a foundation of our principles. Find out more on our website: www.hettichlab.com

Footnotes | All footnotes in the catalog can be found on the last page. The fold-out page allows you to always see the appropriate footnote.

Hettich Packages | No more searching for the right combination of accessories. Our packages include centrifuge, rotor, buckets and adapters – suitable for your specific application.

Model variants | Many of our devices have two different model variants, e.g. cooled and uncooled. In order to be able to distinguish between these two, we use a vertical hyphen (Model x | Model y)
For special requirements you can find further versions of our centrifuges on page 204.

Product overview | Find a quick product overview on page 6-7.

RCF | The relative centrifugal force RCF (or often called g-value) is a characteristic value for centrifugation.

Registrations | Find a detailed overview of all registrations of our products on page 206.

RPM | Is the measurement unit for the speed. It indicates the number of rotations of the rotor in a period of one minute.

Swing-out rotor | During centrifugation, the tubes are spin at a 90° horizontal angle. In the process, the sediment is deposited at the bottom of the tube, separations are formed horizontally. If higher capacities are required in the mid speed range, swing-out rotors are used. The wide variety of accessories is an additional feature of these rotors.

Symbol


Reaction tubes up to 5 ml


Blood collection tubes, urine tubes


Plates, filter plates


Special tubes


PCR strips


Tubes with screw cap


Racks


Hematocrit capillaries


Tubes


Bottles


Blood bags


Cyto accessories

IMPRINT

Hettich 01.21 | We reserve the right to make technical changes to our products as well as printing errors and colour deviations in our printed matters we reserve ourselves.

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