

**ALL AROUND
TALENT**



UNIVERSAL 320/320 R
Benchtop Centrifuges
classic/cooled

Hettich
ZENTRIFUGEN

There are good reasons why we have called these centrifuges UNIVERSAL. Their excellent performance and comprehensive range of accessories enable them to carry out virtually any centrifuging task. In the low speed range, the UNIVERSAL 320 and 320 R process standard tubes up to a volume of 100 ml, microtitre plates, conical tubes with screw cap, blood collection tubes and cyto accessories.

Microlitre tubes can be accelerated to an RCF of 21,382. Centrifuge tubes taking higher volumes (up to 85 ml) also profit from the extraordinary motor power of the UNIVERSAL 320 / 320 R. At an RCF of 9,509, bacteria and yeast sediment quickly and easily.



UNIVERSAL 320 classic

Cat. No. 1401

PERFORMANCE

- High RCF
 - 85 ml tubes up to 9,509
 - 15 ml tubes up to 16,582
 - Microlitre tubes up to 21,382
- Extremely short run-up and run-down times

DESIGN

- Metal housing
- Metal lid
- Stainless steel centrifuging chamber
- Viewing port in the lid

USER-FRIENDLINESS

- Powered lid-locking
- Quick-entry foil keypad
- Easily exchangeable rotors
- 10 programmable memories

REFRIGERATION (UNIVERSAL 320 R)

- Infinitely variable setting from – 20 °C to + 40 °C
- Fast cool function

SAFETY

- Lid locking and holding during rotor run
- Emergency lid-lock release
- Motor-overheating protection
- Chamber-overheating protection (with the UNIVERSAL 320 R)
- Imbalance switch-off
- Automatic rotor recognition
- Lid dropping protection

OPTIONS

As an option, the UNIVERSAL 320 R is also available

- with connection to an external refrigerated/heating circulator (provided by the customer) – **Cat. No. 1406-50** (without internal cooling unit). Depending on circulator performance, the centrifuge can heat or cool within a range of 0 °C to 90 °C,
- with connection for flushing with nitrogen – **Cat. No. 1406-20** (without monitoring and controlling system).

OPERATION AND CONTROL

The display panel and all controls on the UNIVERSAL 320 and 320 R centrifuges have been designed ergonomically. Information on the display is clearly positioned and perfectly legible. During centrifugation, the actual parameter values are indicated. Nine acceleration and braking ramps, or unbraked run-down, can be pre-selected. Ramp 9 always corresponds to the shortest possible run-up or run-down time. The stored parameter combination remains in the memory even after the centrifuge has been switched off. By entering the rotor radius *r*/mm, the centrifuge calculates and indicates the rotational speed RPM or the relative centrifugal force RCF. The twist knob allows quick and easy entry or changing of the parameters.



UNIVERSAL 320 R cooled
Cat. No. 1406

DIGITAL DISPLAY AND CONTROL PANEL

KEYPAD

	Precooling (UNIVERSAL 320 R)
RCF	Change-over from RPM to RCF indication
SELECT	Selection of parameters
START IMPULS	Starts centrifugation / Short cycle mode
STOP OPEN	Stops centrifugation manually / Opens the lid

ENTRY OF THE PARAMETERS

P	Entry of the program number, 10 programmable memories
T/°C	Entry of the temperature in increments of 1 within a range of - 20 °C to + 40 °C (UNIVERSAL 320 R)
RCF	Entry in increments of 10
RPM	Entry in increments of 10
r/mm	Entry of the radius in mm
t/min	Entry of the centrifuging time in minutes and seconds (max. 99 min : 59 sec)
	Entry of the acceleration ramp 1-9 Entry of the braking ramp 1-9



UNIVERSAL 320 R control panel
(N Plus control panel)

ROTORS AND ACCESSORIES

UNIVERSAL 320 / 320 R centrifuges accommodate rotors and accessories for virtually every centrifuging task required in industrial, research and clinical laboratories.

Quick overview of rotors and suitable accessories. The figures highlighted under the arrows refer to the pages where technical and ordering details are listed.

Tubes / plates

Max. capacity

standard tubes	32 x 15 ml or 4 x 100 ml
hematocrit capillaries	24
conical tubes with screw cap	32 x 15 ml or 8 x 50 ml
microtitre plates	10
filter plates	2
cyto suspensions	8
blood collection tubes	48
round-bottom tubes with screw cap	6 x 85 ml
microlitre tubes	30 x 1.5 / 2.0 ml

Rotors

Max. RCF

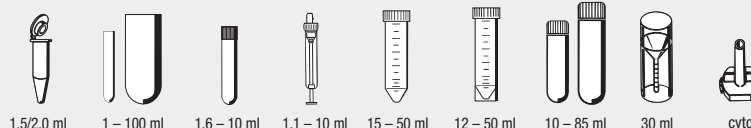
swing-out rotor with bio-containment carriers	4,193
swing-out rotor for conical tubes with screw cap	3,857
swing-out rotor for microtitre and culture plates	2,218
swing-out rotor for 8 cyto suspensions	2,218
angle rotor for round-bottom tubes with screw cap (6 x 85 ml)	9,509
angle rotors (12-, 24- or 30-place) for microlitre tubes (0.2 – 2.0 ml)	21,382

some accessories with bio-containment



Swing-out rotor 4-place

n = 5,000 min⁻¹
max. RCF 4,193
Cat. No. 1494



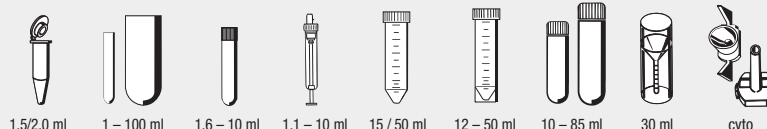
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Page 6-8

some accessories with bio-containment



Swing-out rotor 4-place

n = 4,000 min⁻¹
max. RCF 2,665
Cat. No. 1624



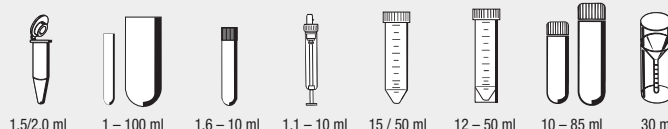
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Page 9-10

some accessories with bio-containment



Swing-out rotor 4-place

n = 4,500 min⁻¹
max. RCF 3,328
Cat. No. 1324

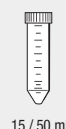


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Page 11-12



Swing-out rotor 8-place

n = 5,000 min⁻¹
max. RCF 3,857
Cat. No. 1617



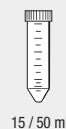
15 / 50 ml

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Page 13



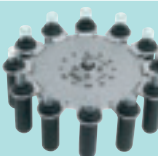
Swing-out rotor 6-place

n = 4,000 min⁻¹
max. RCF 2,701
Cat. No. 1619



15 / 50 ml

→
Page 13

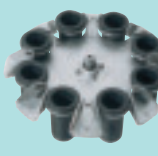


Swing-out rotor 12-place

n = 5,000 min⁻¹
max. RCF 4,193
Cat. No. 1628

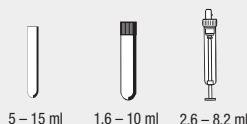


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Page 13



Swing-out rotor 8-place

n = 4,000 min⁻¹
max. RCF 2,415
Cat. No. 1611



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Page 14

ROTORS AND ACCESSORIES

 Swing-out rotor 2-place $n = 4,000 \text{ min}^{-1}$ max. RCF 2,218 Cat. No. 1460	MTP CP DWP MS QP microtitre plate culture plate deep well plate Micronic system filter plate Microtest plate (Terasaki) PCR plate, 96 wells PCR strips → Page 14
 Swing-out rotor 4-place $n = 4,000 \text{ min}^{-1}$ max. RCF 1,896 Cat. No. 1645	MTP CP microtitre plate culture plate → Page 15
 Angle rotor 12-place $n = 15,000 \text{ min}^{-1}$ max. RCF 16,602 Cat. No. 1612	 0.2 – 2.0 ml → Page 15
auto-clavable optional with biocontainment  Angle rotor 24-place $n = 15,000 \text{ min}^{-1}$ max. RCF 21,382 Cat. No. 1420	 0.2 – 2.0 ml → Page 15
auto-clavable with bio-containment  Angle rotor 30-place $n = 14,000 \text{ min}^{-1}$ RCF 21,255 Cat. No. 1689	 0.2 – 2.0 ml → Page 16
 Angle rotor 6-place $n = 9,000 \text{ min}^{-1}$ max. RCF 9,509 Cat. No. 1620 A	      1.5/2.0 ml 15 – 85 ml 8.5 – 10 ml 7.5 – 10 ml 15 / 50 ml 10 – 85 ml → Page 16
 Angle rotor 8-place $n = 4,500 \text{ min}^{-1}$ max. RCF 3,283 Cat. No. 1418	    15 ml 15 / 50 ml 12 / 50 ml 50 ml → Page 16
 Angle rotor 12-place $n = 6,000 \text{ min}^{-1}$ max. RCF 4,146 Cat. No. 1613	    4 – 15 ml 1.6 – 10 ml 1.1 – 10 ml 15 ml → Page 17
 Angle rotor 12-place $n = 12,000 \text{ min}^{-1}$ max. RCF 16,582 Cat. No. 1615	    4 – 15 ml 1.6 – 10 ml 1.1 – 10 ml 15 ml → Page 17
 Hematocrit rotor 24-place $n = 15,000 \text{ min}^{-1}$ max. RCF 21,382 Cat. No. 1650	 capillary → Page 18
 Cyto rotor 6-place $n = 4,000 \text{ min}^{-1}$ max. RCF 2,039 Cat. No. 1626	 cyto → Page 18
 Cyto rotor 8-place $n = 4,000 \text{ min}^{-1}$ max. RCF 2,218 Cat. No. 1648	 cyto → Page 18

Additional tubes e.g. stool tubes or spin columns on request.

ROTORS AND ACCESSORIES

Swing-out rotor, 4-place



↻ 90°

$n = 5,000 \text{ min}^{-1}$
max. RCF 4,193

illustrated with carriers 1425

Cat. No. (without carriers) 1494

capacity in ml	1.5	2.0	1	3	5	6	7	9	15	25	50	100	suspension for cyto accessories
Ø x L in mm	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	
Cat. No.	2078	0536	Rhesus	-	0553 ²⁾	0501 ²⁾	0578 ²⁾	0500 ²⁾	0518 ²⁾	0519 ²⁾	0521 ²⁾	0526 ²⁾	cyto chambers ⁹⁾
 carrier Cat. No. 1425													
													
Cat. No.	1444	1432	1433	1438	1434	1431	1435	1436	1437	1452			
boring Ø x L in mm	11.5 x 38		6.5 x 34	10.5 x 40	13.4 x 50	12.7 x 60		17.5 x 84		25.5 x 84	35.5 x 84	45.5 x 86	-
tubes per rotor	36		144	56	28	48		28		8	4	4	4
max. RCF ²⁾	3,885		3,969	3,913						3,801		2,739	
radius in mm	139		142	140						136		98	
run-up in sec	30												
run-down in sec	☐ 32 ○ 600												
temperature in °C ¹⁾	- 10												

capacity in ml	2.6–2.9	2.7–3	4–5.5	4.5–5	4.9	7.5–8.2	9–10	1.6–5	4–7	4–7	8.5–10	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	29 x 115	29 x 115
Cat. No.	blood collection/urine tubes											0513	-
 carrier Cat. No. 1425													
													
Cat. No.	1438	1441	1438	1441	1439	1438	1441	1443	1737				
boring Ø x L in mm	13.4 x 50		16.5 x 50	13.4 x 50		16.5 x 50	17 x 45	13.4 x 50		16.5 x 50		30 x 90	30 x 90
tubes per rotor	28						16	28				4	
max. RCF ²⁾	3,913											4,081	
radius in mm	140											146	
run-up in sec	30												
run-down in sec	 32  600												
temperature in °C ¹⁾	- 10												

¹⁾ Lowest attainable temperature in precooled refrigerated centrifuges at 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, carrier 1427 cannot be closed with lid 1421.

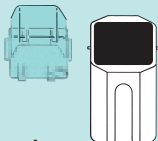
ROTORS AND ACCESSORIES



illustrated with carriers 1427

Swing-out rotor Cat. No. (without carriers) 1494

capacity in ml	1.5/2.0		1	3	5	6	7	9	15	25	50	1.1–1.4	2.6–2.9	2.7–3	4–5.5
Ø x L in mm	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
Cat. No.	2078/0536	-	Rhesus	-	0553 ²⁾	0501 ²⁾	0578 ²⁾	0500 ²⁾	0518 ²⁾	0519 ²⁾	0521 ²⁾	blood collection/urine tubes			
lid Cat. No. 1421  carrier Cat. No. 1427															
															
Cat. No.	5277	5273	1357	1327	1732	5229	5230	5237	5231	5232	5233	5278	1732	5229	5279
boring Ø x L in mm	11.5 x 38	13.7 x 38	6.5 x 23	10.5 x 23	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
tubes per rotor	36	48	120	48	32	48	48	24		8	4	48	32	48	20
max. RCF ²⁾	4,109	4,053	4,081	4,053	4,025	4,053	3,941					4,109	4,025	4,053	4,109
radius in mm	147	145	146	145	144	145	141					147	144	145	147
run-up in sec	30														
run-down in sec	 32  600														
temperature in °C ¹⁾	-7														

capacity in ml	4.5–5	4.9	7.5–8.2	9–10	1.6–5	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	
Cat. No.	blood collection/urine tubes								0509	0513	-	-	-	
lid Cat. No. 1421  carrier Cat. No. 1427														
														+ 6316
Cat. No.	5230	1732	5279	5271 ⁴⁾	1732	5271	5231	5275	5276	1731	5272	5233 ⁴⁾		
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	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		
tubes per rotor	48	32	20		32	20	24	4		8	4	4		
max. RCF ²⁾	3,941	4,025	4,109	3,969	4,025	3,969	3,941	4,165	4,053	3,969	4,025	4,053		
radius in mm	141	144	147	142	144	142	141	149	145	142	144	145		
run-up in sec	30													
run-down in sec	⏻ 32 ⏻ 600													
temperature in °C ¹⁾	-7													

⁴⁾ Please remove the inserts.

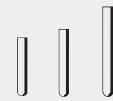
⁹⁾ Please ask for our detailed cyto brochure.

ROTORS AND ACCESSORIES



illustrated with carriers 1430 and lids 1382
with bio-containment⁵⁾

Swing-out rotor Cat. No. (without carriers) 1494

capacity in ml	1.5	2.0	1	3	5/6/7	9	15	25	50	100	1.1–1.4	2.7–5	2.6–4.9	4–8.2
Ø x L in mm	11 x 38		6 x 45	10 x 60	12 x 75/82/100	14 x 100	17 x 100	24 x 100	34 x 100	44 x 100	8 x 66	11 x 66/92	13 x 65/90	15 x 75/92
Cat. No.	2078	0536	Rhesus	-	0553 ²⁾ /0501 ²⁾ /0578 ²⁾	0500 ²⁾	0518 ²⁾	0519 ²⁾	0521 ²⁾	0526 ²⁾	blood/urine tubes			
lid with bio-containment⁵⁾ Cat. No. 1382   carrier Cat. No. 1430														
														
Cat. No.	1351		1339	1343	1383	1329		1330	1331	0761	1457	1383		1459
boring Ø x L in mm	11.2 x 38		6.5 x 34	10.5 x 43	13.4 x 48	17.6 x 91		25.2 x 87	35.2 x 87	45.6 x 98	9 x 47	13.4 x 48		15.6 x 47
tubes per rotor	20		108	36	20	16		4			28	20		16
max. RCF ²⁾	3,857		4,081	4,137	4,025	3,997		3,829	3,801	4,025	4,053	4,025		4,053
radius in mm	138		146	148	144	143		137	136	144	145	144		145
run-up in sec	30													
run-down in sec	☐ 32 ○ 600													
temperature in °C ¹⁾	-10													

capacity in ml	9–10	10	1.6–7	4–10	15	30	50	12	25	30	50	10	30	50	85	30
Ø x L in mm	16 x 92	15 x 102	13 x 75/100	16 x 75/100	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
Cat. No.	blood/urine tubes				0509	-	0513	-	-	-	-	-	0545	0546	0547	0534 ⁶⁾
lid with bio-containment ⁵⁾ Cat. No. 1382  carrier Cat. No. 1430 																 chrome bath tube
																 rubber insert
Cat. No.	1329	1329 ⁴⁾	1383	1348	1347	1365	1384	6311	1363	1365	6318	1348	4417	4416	1396	0765
boring Ø x L in mm	17.6 x 91		13.4 x 48	16.5 x 56	17 x 90	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	45.6 x 98
tubes per rotor	16		20	16	4							16	4			4
max. RCF ²⁾	3,997	4,193	4,025		4,193				3,689	4,193		4,025	3,857	4,137	4,109	3,997
radius in mm	143	150	144		150				132	150		144	138	148	147	143
run-up in sec	30															
run-down in sec	 32  600															
temperature in °C ¹⁾	-10															

¹⁾ Lowest attainable temperature in precooled refrigerated centrifuges at max. speed.

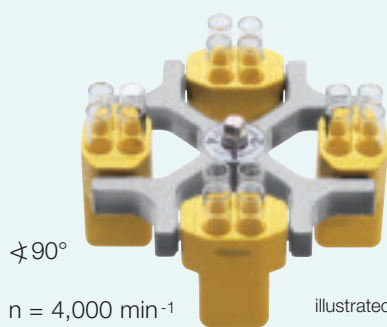
²⁾ Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote ²⁾ is 4,000.

⁴⁾ Please remove the inserts.

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

ROTORS AND ACCESSORIES

Swing-out rotor, 4-place

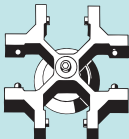
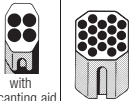


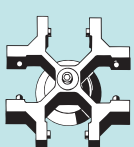
↗ 90°

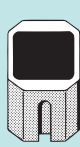
$n = 4,000 \text{ min}^{-1}$
max. RCF 2,665

illustrated with carriers 1369

Cat. No. (without carriers) **1624**

capacity in ml	5		6	7	9		15		20	25	45	50		1.1–1.4	4–5.5		
Ø x L in mm	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		8 x 66	15 x 75		
Cat. No.	0553 ²⁾		0501 ²⁾	0578 ²⁾	0500 ²⁾		0518 ²⁾		-	0519 ²⁾	-	0521 ²⁾		blood/urine tubes			
 rotor Cat. No. 1624																	
	 with decanting aid		 with decanting aid			 + 0701								 + 0701	 + 0716		
Cat. No.	1369-91	1372	1369-92		1370	1741	1369	1742	1346	1745	1345	1308	1746	1741	1742		
boring Ø x L in mm	11.5 x 64.4	13.5 x 65	11.5 x 71.5		14.6 x 74	14.6 x 78	17.6 x 74	17.6 x 78	21.5 x 74	26 x 78	32 x 74	35.7 x 88.2	35 x 78	14.6 x 78	17.6 x 78		
tubes per rotor	16	68	16		20	40	16	28	8		4			40	28		
max. RCF ²⁾	2,057	2,164	2,308			2,415	2,308	2,451	2,361	2,451	2,361	2,290	2,451	2,415	2,325		
radius in mm	115	121	129			135	129	137	132	137	132	128	137	135	130		
run-up in sec	20																
run-down in sec	 25  390																
temperature in °C ¹⁾	-17				-15	-17	-15	-17	-15	-17	-15	-15		-15			

capacity in ml	4.9	1.6–5	4–7	8.5–10	30	suspensions for cyto accessories
Ø x L in mm	13 x 90	13 x 75	16 x 75	16 x 100	26 x 95	
Cat. No.	blood collection/urine tubes				0545	cyto chambers⁹⁾
 rotor Cat. No. 1624						
	+ 0716					
Cat. No.	1741	1742	1369	1745	1660	1680
boring Ø x L in mm	14.6 x 78	17.6 x 78	17.6 x 74	26 x 78	-	
tubes per rotor	40	28	16	8	4	
max. RCF ²⁾	2,451	2,325	2,308	2,451	1,556	
radius in mm	137	130	129	137	87	
run-up in sec	20					
run-down in sec	☐ 25 ○ 390					
temperature in °C ¹⁾	-15		-17	-15	-16	

capacity in ml	1.5	2.0	1	3	4
Ø x L in mm	11 x 38		6 x 45	10 x 60	12 x 60
Cat. No.	2078	0536	Rhesus	-	-
 carrier Cat. No. 1366					
Cat. No.	5277	1357	1327	1326	
boring Ø x L in mm	11.5 x 38	6.5 x 23	10.5 x 23	12.5 x 44	
tubes per rotor	36	120	48		
max. RCF ²⁾	1,968	1,950	1,932		
radius in mm	110	109	108		
run-up in sec	20				
run-down in sec	☐ 25 ○ 390				
temperature in °C ¹⁾	-17				

⁶⁾ A rubber stopper for closing the tube is available under Cat. No. 0535.

The tube may not be centrifuged with the stopper. The stopper only serves to close the tube for agitating or mixing.

⁹⁾ Please ask for our detailed cyto brochure.

ROTORS AND ACCESSORIES



illustrated with carriers 1381 and lids 1382
with bio-containment⁵⁾

Swing-out rotor Cat. No. (without carriers) 1624

capacity in ml	1.5	2.0	1	3	5/6/7	9	15	25	50	100	1.1–1.4	2.7–5	2.6–4.9	4–8.2
Ø x L in mm	11 x 38		6 x 45	10 x 60	12 x 75/82/100	14 x 100	17 x 100	24 x 100	34 x 100	44 x 100	8 x 66	11 x 66/92	13 x 65/90	15 x 75/92
Cat. No.	2078	0536	Rhesus	-	0553 ²⁾ /0501 ²⁾ /0578 ²⁾	0500 ²⁾	0518 ²⁾	0519 ²⁾	0521 ²⁾	0526 ²⁾	blood/urine tubes			
lid with bio-containment ⁵⁾ Cat. No. 1382  carrier Cat. No. 1381 														
														
Cat. No.	1351	1339	1343	1383	1329	1330	1331	0761	1457	1383	1459	1383	1383	1459
boring Ø x L in mm	11.2 x 38	6.5 x 34	10.5 x 43	13.4 x 48	17.6 x 91	25.2 x 87	35.2 x 87	45.6 x 98	9 x 47	13.4 x 48	15.6 x 47	13.4 x 48	13.4 x 48	15.6 x 47
tubes per rotor	20	108	36	20	16	4	4	4	28	20	16	20	20	16
max. RCF ²⁾	2,451	2,594	2,630	2,558	2,540	2,433	2,415	2,558	2,576	2,558	2,576	2,558	2,558	2,576
radius in mm	137	145	147	143	142	136	135	143	144	143	144	143	143	144
run-up in sec	20													
run-down in sec	25 390													
temperature in °C ¹⁾	-15													

capacity in ml	9–10	10	1.6–7	4–10	15	50	12	25	30	50	10	30	50	85	30
Ø x L in mm	16 x 92	15 x 102	13 x 75/100	16 x 75/100	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
Cat. No.	blood/urine tubes				0509	0513	-	-	-	-	-	0545	0546	0547	0534 ⁶⁾
lid with bio-containment ⁵⁾ Cat. No. 1382  carrier Cat. No. 1381 															
															
Cat. No.	1329	1329 ⁴⁾	1383	1348	1347	1384	6311	1363	1365	6318	1348	4417	4416	1396	0765
boring Ø x L in mm	17.6 x 91	13.4 x 48	16.5 x 56	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	45.6 x 98	45.6 x 98
tubes per rotor	16	20	16	4	4	4	4	4	4	16	4	4	4	4	4
max. RCF ²⁾	2,540	2,665	2,558	2,522	2,665	2,343	2,665	2,522	2,451	2,630	2,612	2,540	2,540	2,540	2,540
radius in mm	142	149	143	141	149	131	149	141	137	147	146	142	142	142	142
run-up in sec	20														
run-down in sec	25 390														
temperature in °C ¹⁾	-15														

¹⁾ Lowest attainable temperature in precooled refrigerated centrifuges at 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.

ROTORS AND ACCESSORIES

Swing-out rotor, 4-place

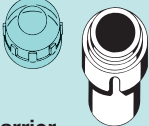


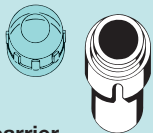
↻ 90°

n = 4,500 min⁻¹
max. RCF 3,328

illustrated with carriers 1398

Cat. No. (without carriers) **1324**

capacity in ml	1.5	2.0	1	3	4	5	6	7	9	15	25	50	85	100
Ø x L in mm	11x38		6x45	10x60	10x88	12x75	12x82	12x100	14x100	17x100	24x100	34x100	38x106	44x100
Cat. No.	2078	0536	Rhesus	-	-	0553 ²⁾	0501 ²⁾	0578 ²⁾	0500 ²⁾	0518 ²⁾	0519 ²⁾	0521 ²⁾	0549	0526 ²⁾
lid with bio-containment ⁵⁾ Cat. No. 1382 														
														 rubber insert
Cat. No.	1351		1339	1343		1383			1329		1330	1331	1396	0761
boring Ø x L in mm	11.2x38		6.5x34	10.5x43		13.4x48			17.6x91		25.2x87	35.2x87	38.5x92	45.6x100.5
tubes per rotor	20		108	36		20			16		4			
max. RCF ²⁾	3,056		3,237	3,283		3,192			3,170		3,034	3,011	3,260	3,192
radius in mm	135		143	145		141			140		134	133	144	141
run-up in sec	30													
run-down in sec	30 220													
temperature in °C ¹⁾	-6													

capacity in ml	1.1–1.4	2.6–2.9	4.9	2.7–3	4.5–5	4–5.5	7.5–8.2	9–10	10	1.6–5	4–7	4–7	8.5–10
Ø x L in mm	8x66	13x65	13x90	11 x 66	11 x 92	15 x 75	15 x 92	16 x 92	15 x 102	13 x 75	13 x 100	16x75	16x100
Cat. No.	blood collection/urine tubes												
lid with bio-containment ⁵⁾ Cat. No. 1382  carrier Cat. No. 1390													
													
Cat. No.	1457	1383				1459		1329	1329⁴⁾	1383		1348	
boring Ø x L in mm	9x47	13.4x48				15.6x47		17.6x91		13.4x48		16.5x56	
tubes per rotor	28	20				16				20		16	
max. RCF ²⁾	3,215	3,192				3,215		3,170	3,328	3,192		3,147	
radius in mm	142	141				142		140	147	141		139	
run-up in sec	30												
run-down in sec	 30  220												
temperature in °C ¹⁾	-6												

⁴⁾ Please remove the inserts.

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

⁶⁾ A rubber stopper for closing the tube is available under Cat. No. 0535.

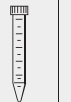
The tube may not be centrifuged with the stopper. The stopper only serves to close the tube for agitating or mixing.

ROTORS AND ACCESSORIES



carrier 1398 with adapter 1483
and conical 15 ml tubes with screw cap 0509

Swing-out rotor 1324

capacity in ml	15		50	12	25	30	50	10	30	50	85	30	
Ø x L in mm	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	
Cat. No.	0509		0513	-	-	-	-	-	0545	0546	0547	0534 ⁶⁾	
lid with bio-containment ⁵⁾ Cat. No. 1382												 chrome bath tube	
												 rubber insert	
Cat. No.	1347	1356	1384	6311	1363	1365	6318	1348	4417	4416	1396	0765	
boring Ø x L in mm	17 x 90	17 x 107	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	45.6 x 100.5	
tubes per rotor	4	12	4					16	4				
max. RCF ²⁾	3,328		3,328		2,920		3,328		3,147	3,056	3,283	3,260	3,170
radius in mm	147		147		129		147		139	135	145	144	140
run-up in sec	30												
run-down in sec	 30  220												
temperature in °C ¹⁾	- 6												

capacity in ml	9	15	2.6–2.9	4–5.5	9–10	10	4–7	15	50	12	50
Ø x L in mm	14 x 100	17 x 100	13 x 65	15 x 75	16 x 92	15 x 102	16 x 75	17 x 120	29 x 115	17 x 100	29 x 115
Cat. No.	0500 ²⁾	0518 ²⁾	blood collection/urine tubes					0509	0513	-	-
 carrier Cat. No. 1398											
		+ 2 x 0716				+ 0716					
Cat. No.	1482							1483	1484	1482	1484 ⁴⁾
boring Ø x L in mm	17.5 x 81							17 x 100	30 x 98	17.5 x 81	30 x 98
tubes per rotor	16							16	4	16	4
max. RCF ²⁾	3,192							3,305	3,260	3,192	3,260
radius in mm	141							146	144	141	144
run-up in sec	30										
run-down in sec	 30  220										
temperature in °C ¹⁾	- 6										

1) Lowest attainable temperature in precooled refrigerated centrifuges at 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, carrier 1390 cannot be closed with lid 1382.

ROTORS AND ACCESSORIES

Swing-out rotor, 6-place



↗ 90°

$n = 4,000 \text{ min}^{-1}$
max. RCF 2,701

Cat. No. (with carriers) **1619**

Swing-out rotor, 8-place



↗ 45°

$n = 5,000 \text{ min}^{-1}$
max. RCF 3,857

Cat. No. (with carriers) **1617**

Swing-out rotor, 12-place



↗ 55°
(with carriers 1127)
↗ 60°
(with carriers 1122)
↗ 80°
(with carriers 1621)

$n = 5,000 \text{ min}^{-1}$
max. RCF 4,193

Cat. No. (without carriers) **1628**

capacity in ml	15	50
Ø x L in mm	17 x 120	29 x 115
Cat. No.	0509	0513
		
rotor Cat. No. 1619		
Cat. No.	1462-A	-
boring Ø x L in mm	17 x 84	30 x 87.5
tubes per rotor	6	
max. RCF ²⁾	2,701	
radius in mm	151	
run-up in sec	20	
run-down in sec	☐ 22 ☐ 265	
temperature in °C ¹⁾	- 15	

capacity in ml	15	50
Ø x L in mm	17 x 120	29 x 115
Cat. No.	0509	0513
		
rotor Cat. No. 1617		
Cat. No.	1462-A	-
boring Ø x L in mm	17 x 84	30 x 94.5
tubes per rotor	8	
max. RCF ²⁾	3,857	
radius in mm	138	
run-up in sec	20	
run-down in sec	☐ 19 ☐ 380	
temperature in °C ¹⁾	- 10	

capacity in ml	5	10	15	2.6–2.9	2.7–3	4–5.5	7.5–8.2	1.6–5	4–7	8.5–10
Ø x L in mm	12 x 75	17 x 70	17 x 100	13 x 65	11 x 66	15 x 75	15 x 92	13 x 75	16 x 75	16 x 100
Cat. No.	0553²⁾	2079	0518²⁾	blood collection/urine tubes						
										
rotor Cat. No. 1628										
Cat. No.	1127	1122	1621	1127	1122	1621	1127	1122	1621	1621
boring Ø x L in mm	13.2 x 53	17.5 x 53	17.5 x 79	13.2 x 53	17.5 x 53	17.5 x 79	13.2 x 53	17.5 x 53	17.5 x 79	17.5 x 79
tubes per rotor	12									
max. RCF ²⁾	3,494	3,522	4,193	3,494	3,522	4,193	3,494	3,522	4,193	4,193
radius in mm	125	126	150	125	126	150	125	126	150	150
run-up in sec	16									
run-down in sec	☐ 16 ☐ 360									
temperature in °C ¹⁾	-15	-10	-10	-15	-15	-10	-15	-15	-15	-10

⁴⁾ Please remove the inserts.

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

⁶⁾ A rubber stopper for closing the tube is available under Cat. No. 0535.

The tube may not be centrifuged with the stopper. The stopper only serves to close the tube for agitating or mixing.

ROTORS AND ACCESSORIES

Swing-out rotor, 8-place

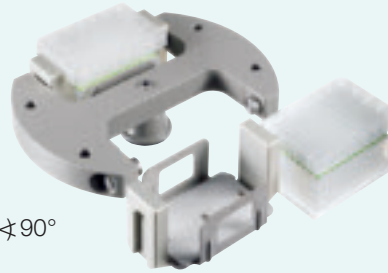


↻ 90°

n = 4,000 min⁻¹
max. RCF 2,415

Cat. No. (without carriers) **1611**

Swing-out rotor, 2-place

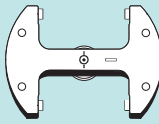
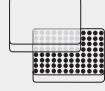
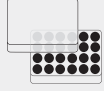


↻ 90°

n = 4,000 min⁻¹
max. RCF 2,218

Cat. No. (without carriers) **1460**

capacity in ml	5	6	7	10		15	2.6–2.9	2.7–3	4–5.5	4.5–5	7.5–8.2	1.6–5	4–7	4–7	8.5–10
Ø x L in mm	12 x 75	12x82	12 x100	17 x 70	13 x 100	17 x 100	13 x 65	11x66	15 x 75	11 x 92	15x92	13 x 75	13 x 100	16x 75	16 x 100
Cat. No.	0553 ²⁾	0501 ²⁾	0578 ²⁾	2079	-	0518 ²⁾	blood collection/urine tubes								
 rotor Cat. No. 1611															
															
Cat. No.	1131		1643	1132	1643	1644	1131		1132	1643	1644	1131	1643	1132	1644
boring Ø x L in mm	13 x 53		13.2 x 81	17.5 x 53	13.2 x 81	17.5 x 81	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
tubes per rotor	8														
max. RCF ²⁾	1,914		2,415	1,914	2,415		1,914		2,415		1,914	2,415	1,914	2,415	
radius in mm	107		135	107	135		107		135		107	135	107	135	
run-up in sec	20														
run-down in sec	☐ 20 ○ 155														
temperature in °C ¹⁾	-16														

D x W x H in mm	86 x 128 x 15/17.5		86 x 128 x 22	86x128 x 44.5	86 x 128 x 46	86 x 128 x 83	59x84 x 11	82 x 124x20	-
capacity in ml	-								0.2
Cat. No.	MTP		CP	DWP	MS	QP	Microtest plate (Terasaki)	PCR plate, 96 wells	PCR strips
 rotor Cat. No. 1460									
									
Cat. No.	1453							1453 + 1469	
boring Ø x L in mm	-							-	
plates/strips per rotor	10	8	8	2	2	2	4	2	24x8
max. RCF ²⁾	2,218								
radius in mm	124								
run-up in sec	40								
run-down in sec	☐ 45 ○ 1,130								
temperature in °C ¹⁾	- 6								

¹⁾ Lowest attainable temperature in precooled refrigerated centrifuges at 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.

ROTORS AND ACCESSORIES

Swing-out rotor, 4-place



↗ 90°

n = 4,000 min⁻¹
max. RCF 1,896

Cat. No. (without carriers) **1645**

Angle rotor, 12-place



↗ 45°

n = 15,000 min⁻¹
max. RCF 16,602

Cat. No. **1612**

Angle rotor, 24-place



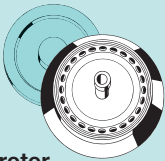
↗ 40°

n = 15,000 min⁻¹
max. RCF 21,382

Cat. No. **1420**

D x W x H in mm	86 x 128 x 15/17.5		86 x 128 x 22
Cat. No.	MTP		CP
 rotor Cat. No. 1645			
Cat. No.	4345		
boring Ø x L in mm	-		
plates per rotor	4		
max. RCF ²⁾	1,896		
radius in mm	106		
run-up in sec	20		
run-down in sec	19 800		
temperature in °C ¹⁾	- 16		

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	
Cat. No.	-	-	-	-	2078	0536
 rotor Cat. No. 1612 lid incl.						
						
Cat. No.	2024		2023		2031 ⁷⁾	-
boring Ø x L in mm	6 x 40		8 x 40		10.2x19	11.4 x 39
tubes per rotor	12					
max. RCF ²⁾	16,602					
radius in mm	66					
run-up in sec	25					
run-down in sec	 23  240					
temperature in °C ¹⁾	- 10					

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	
Cat. No.	-	-	-	-	2078	0536
 rotor Cat. No. 1420						
						
Cat. No.	2024		2023		2031 ⁷⁾	-
boring Ø x L in mm	6 x 40		8 x 40		10.2 x 19	11.2 x 42.6
tubes per rotor	24					
max. RCF ²⁾	21,382					
radius in mm	85					
run-up in sec	25					
run-down in sec	 24  550					
temperature in °C ¹⁾	- 4					

Optional for rotor 1420:



lid Cat. No. 2425
with bio-containment⁵⁾,
autoclavable



lid Cat. No. 2423
with bio-containment⁵⁾,
autoclavable, phenol-resistant

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 2031.

ROTORS AND ACCESSORIES

Angle rotor, 30-place



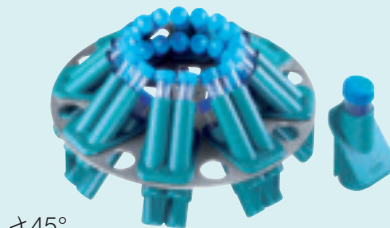
↗ 45°

n = 14,000 min⁻¹
max. RCF 21,255

with bio-containment⁵⁾

Cat. No. 1689

Angle rotor, 8-place



↗ 45°

n = 4,500 min⁻¹
max. RCF 3,283

Cat. No. (without adapters) 1418

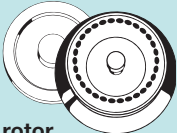
Angle rotor, 6-place



↗ 35°

n = 9,000 min⁻¹
max. RCF 9,509

Cat. No. 1620 A

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	
Cat. No.	-	-	-	-	2078	0536
lid with bio-containment⁵⁾ incl.  rotor Cat. No. 1689						
						
Cat. No.	2024		2023		2031 ⁷⁾	-
boring Ø x L in mm	6 x 40		8 x 40		10.2 x 19	11.2 x 40.9
tubes per rotor	30					
max. RCF ²⁾	21,255					
radius in mm	97					
run-up in sec	35					
run-down in sec	 31  770					
temperature in °C ¹⁾	0					

capacity in ml	15	15	50	12	50	50
Ø x L in mm	17x100	17x120	29x 115	17x100	29 x 115	29 x 107
Cat. No.	0518 ²⁾	0509	0513	-	-	0546
 rotor Cat. No. 1418						
	+ 0716 	+ E 2109 	+ E 2110 	+ 0716 		
Cat. No.	1467	1467	1468	1467	1468	
boring Ø x L in mm	17.4 x 91		30.2x92	17.4 x 91	30.2 x 92	
tubes per rotor	32		8	32	8	
max. RCF ²⁾	3,215	3,283	3,147	3,215	3,147	
radius in mm	142	145	139	142	139	
run-up in sec	30					
run-down in sec	 31  640					
temperature in °C ¹⁾	- 11					

capacity in ml	1.5	2.0	15	50	75	85	7.5–8.2	9–10	10	8.5–10	15	50	10	30	50	85		
Ø x L in mm	11 x 38		17 x 100	34 x 100	35 x 105	38 x 106	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	38 x 106		
Cat. No.	2078	0536	0518 ²⁾	0521 ²⁾	0548	0549	blood/urine tubes				0509	0513	-	0545	0546	0547		
 rotor Cat. No. 1620 A																		
																		
Cat. No.	1449		1451	1463		-		1451				1466	1454	1646 ³⁾	1448	1447	1446	-
boring Ø x L in mm	11.4 x 39		17.5 x 92	35 x 89		38.6 x 90.2		17.5 x 92				17 x 106	29.8 x 97	-	16.5 x 74	26 x 85	29 x 92	38.6 x 90.2
tubes per rotor	24		6	6		6		6				6	3	6	12	6		
max. RCF ²⁾	9,146		8,784	9,327		9,509		8,784				8,965		8,784	8,603	9,056	9,509	
radius in mm	101		97	103		105		97				99		97	95	100	105	
run-up in sec	30																	
run-down in sec	 30  970																	
temperature in °C ¹⁾	- 11																	

¹⁾ Lowest attainable temperature in precooled refrigerated centrifuges at 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.

ROTORS AND ACCESSORIES

Angle rotor, 12-place



±35°

n = 6,000 min⁻¹
max. RCF 4,146

Cat. No. 1613

Angle rotor, 12-place



±35°

n = 12,000 min⁻¹
max. RCF 16,582

Cat. No. 1615

capacity in ml	4	5	6	15	1.1–1.4	2.6–2.9	2.7–3	4.5–5	4.9	7.5–10	10	1.6–5	4–7	8–10	15	
Ø x L in mm	10x88	12x75	12x82	17x100	8x66	13x65	11x66	11x92	13x90	15/16x92	15x102	13x75	13x100	16x100/125	17x120	
Cat. No.	-	0553 ²⁾	0501 ²⁾	0518 ²⁾	blood collection/urine tubes										0509	
 rotor Cat. No. 1613																
																
Cat. No.	6305	1054-A	-	1054-A	-			-			1054-A	-				
boring Ø x L in mm	11.5x67.5	13.5x60	17.7x88	13.5x60	17.7x88			17.7x88			13.5x60	17.7x88				
tubes per rotor	12											12	12	12	6	6
max. RCF ²⁾	3,502	3,300	4,146	3,300	4,146			4,146			3,300	4,146				
radius in mm	87	82	103	82	103			103			82	103				
run-up in sec	15															
run-down in sec	 15  570															
temperature in °C ¹⁾	- 16															

capacity in ml	4	5	6	15	1.1–1.4	2.6–2.9	2.7–3	4.5–5	4.9	7.5 – 10	10	1.6–5	4–7	8–10	15	
Ø x L in mm	10x88	12x75	12x82	17x100	8x66	13x65	11x66	11x92	13x90	15/16x92	15x102	13x75	13x100	16x100/125	17x120	
Cat. No.	-	0553 ²⁾	0501 ²⁾	0518 ²⁾	blood collection/urine tubes										0509	
 rotor Cat. No. 1615																
																
Cat. No.	6305	1054-A	-		1054-A			-				1054-A	-			
boring Ø x L in mm	11.5x67.5	13.5x60	18x88		13.5x60			18 x 88				13.5x60	18 x 88			
tubes per rotor	12											12	12	12	6	6
max. RCF ²⁾	14,006	13,201	16,582		13,201			16,582				13,201	16,582			
radius in mm	87	82	103		82			103				82	103			
run-up in sec	40															
run-down in sec	 40  840															
temperature in °C ¹⁾	- 2															

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 2031.

⁸⁾ 6-place adapter set for conical 50 ml tubes with screw cap.

ROTORS AND ACCESSORIES

Hematocrit rotor

The hematocrit rotor enables centrifuging the capillaries in separate chambers. Each capillary is secured within its own chamber and supported by a holding tray. This holding tray serves to contain glass shards and any leakage, should a tube break. It is easy to clean and disposable in the case of glass breakage. Other capillaries will not be affected. The rotor lid is cover and evaluation disk in one. This ensures fast and easy determination of the hematocrit value.

Hematocrit rotor, 24-place



n = 15,000 min⁻¹
max. RCF 21,382

Cat. No. 1650

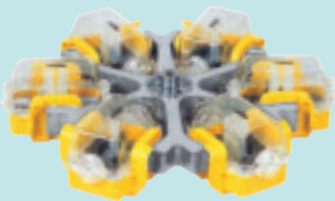
capillaries, heparinised	basic	mylar-coated	self-sealing and mylar-coated
Cat. No.	2074	1072	1071
 rotor Cat. No. 1650			
	sealing putty		
Cat. No.	2077		-
boring Ø x L in mm	-		
capillaries per rotor	24		
max. RCF ²⁾	21,382		
radius in mm	85		
run-up in sec	13		
run-down in sec	 9  180		
temperature in °C ¹⁾	- 1		

Rotors for cytology

Detailed information on our comprehensive range of cyto accessories is provided in a separate brochure. We will be pleased to send one to you on request.

Application notes from our R&D department on the preparation of slides for the cytological examination of various body fluids can be obtained free of charge or downloaded from our homepage www.hettichlab.com

Cyto rotor, 6-place



n = 4,000 min⁻¹
max. RCF 2,039

illustrated with
suspensions 1660
and lids 1661
for cyto chambers

Cat. No. (without suspensions) 1626

Cyto rotor, 8-place



n = 4,000 min⁻¹
max. RCF 2,218

illustrated with
suspensions 1680
for angle chambers

Cat. No. (with suspensions) 1648

ROLLING CABINETS

Rolling cabinets for Hettich centrifuges save space on the laboratory bench while ensuring enhanced flexibility.

All rolling cabinets are of sturdy design and feature castors and two locks. Any vibrations of the centrifuge are safely compensated for.

Rolling cabinets with Cat. No. 4612-K and 4613-K are suited for the models:

- **ROTOFIX 32 A**
- **UNIVERSAL 320/320 R**
- **ROTINA 38/38 R**
- **ROTINA 420**
- **ROTANTA 460 /460 S**

Rolling cabinets with Cat. No. 4614-K and 4615-K are suited for the models:

- **ROTINA 420 R**
- **ROTANTA 460 R /460 RS**



Low and narrow,
with one drawer.
Depth 650 mm

Cat. No. 4612-K



Low and wide,
with one drawer.
Depth 650 mm

Cat. No. 4614-K



High and narrow,
with two drawers.
Depth 650 mm

Cat. No. 4613-K



High and wide,
with two drawers.
Depth 650 mm

Cat. No. 4615-K

TECHNOLOGY

TECHNOLOGY	UNIVERSAL 320		UNIVERSAL 320 R		
Benchtop centrifuge, without rotor	classic		cooled		
Power supply ^{*)}	200–240 V 1~	100–127 V 1~	200-240 V 1~	240 V 1~	115–127 V 1~
Frequency	50–60 Hz	50–60 Hz	50 Hz	60 Hz	60 Hz
Consumption	400 VA		800 VA		950 VA
Emission	EN 55011 group 1, class B, EN 61000-3-2, EN 61000-3-3	FCC class B	EN 55011 group 1, class B, EN 61000-3-2, EN 61000-3-3		FCC class B
Immunity	EN 61000-6-2	-	EN 61000-6-2		-
 Max. capacity	4 x 100 ml				
 Max. RPM (speed)	15,000 min ⁻¹				
Max. RCF	21,382				
Running time	1 sec – 99 min : 59 sec, ∞ continuous run, short cycle mode (impulse key)				
Dimensions (H x W x D)	346 x 395 x 520 mm		346 x 401 x 695 mm		
Weight	approx. 29 kg		approx. 52 kg		
Refrigeration					
Temperature control, infinitely variable	-		from - 20 to + 40 °C		
Cat. No.	1401	1401-01	1406	1406-01	

^{*)} Other voltages on request.



Hettich centrifuges comply with all relevant EU standards in effect and conform to the European level of quality and safety for medical devices. Evidence is provided by national and international test marks such as IEC 61010 or the CE conformity. The ISO 9001:2000 and ISO 13485:2003 certificates accredited to the company bear witness to the extreme care and responsibility Hettich puts into the manufacturing of centrifuges and their accessories.

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