

Anexa tehnica 8

Universal 320R, rotor 1418, 8x adaptoare 1647, Andreas Hettich, Germania

Parametri ceruti	Parametri oferiti
"1. Caracteristici generale: Centrifugă de uz general, cu refrigerare Funcție de prerăcire Interval temperatură: minim de la -20°C până la cel puțin +40°C Viteză variabilă: Minim: 500–1000 rpm Maxim: ≥15.000 rpm Ajustare în pași de cel mult 10 rpm RCF maxim: ≥20.000 Nivel de zgomot: ≤65 dB Operare prin tastatură și buton multifuncțional de control Tastă de impuls pentru funcționare scurtă 2. Programe și control: Minimum 9 programe de lucru programabile Minimum 9 trepte de accelerație și 10 trepte de decelerație Sistem de afișaj digital (LCD/LED) cu iluminare, ce indică toți parametrii activi Mesaj auditiv (beep) la finalul ciclului 3. Siguranță și structură: Carcasă și capac: material metalic rezistent Cameră de centrifugare: oțel inoxidabil Port de vizualizare în capac Blocare automată motorizată a capacului Protecție împotriva deschiderii accidentale Deblocare de urgență Detecție automată a dezechilibrului Detecție și afișare erori pe ecran Recunoaștere automată a rotorului 4. Specificații tehnice: Alimentare: 200–240V, 50/60 Hz Timer: 1 sec – 99 min 59 sec, mod funcționare continuă Rulare și frânare: max. 30 secunde 5. Rotor și compatibilitate: Furnizată cu rotor unghiular fix (45°) Capacitate totală a rotorului: 90 ml-200ml Compatibilitate cu eprubete standard: Minim 30 eprubete per rotor Suport pentru eprubete de: 3–5 ml (13 × 75 mm) 8–10 ml (16 × 100 mm) "	"1. Caracteristici generale: Centrifugă de uz general, cu refrigerare Funcție de prerăcire Interval temperatură: minim de la -20°C până la cel puțin +40°C Viteză variabilă: Minim: 500 rpm Maxim: 16.000 rpm Ajustare în pași de 10 rpm RCF maxim: 24.900 Nivel de zgomot: 50 dB Operare prin tastatură și buton multifuncțional de control Tastă de impuls pentru funcționare scurtă 2. Programe și control: Minimum 9 programe de lucru programabile Minimum 9 trepte de accelerație și 10 trepte de decelerație Sistem de afișaj digital (LCD) cu iluminare, ce indică toți parametrii activi Mesaj auditiv (beep) la finalul ciclului 3. Siguranță și structură: Carcasă și capac: material metalic rezistent Cameră de centrifugare: oțel inoxidabil Port de vizualizare în capac Blocare automată motorizată a capacului Protecție împotriva deschiderii accidentale Deblocare de urgență Detecție automată a dezechilibrului Detecție și afișare erori pe ecran Recunoaștere automată a rotorului 4. Specificații tehnice: Alimentare: 200–240V, 50/60 Hz Timer: 1 sec – 99 min 59 sec, mod funcționare continuă Rulare și frânare: max. 30 secunde 5. Rotor și compatibilitate: Furnizată cu rotor unghiular fix (45°), cod 1418 Capacitate totală a rotorului: 10 ml-400(8x50)ml Compatibilitate cu eprubete standard: 32 eprubete per rotor Suporturi pentru eprubete de: 3–5 ml (13 × 75 mm)- 8x 1054-A 8–10 ml (16 × 100 mm) – 8x 0716 "

BENCHTOP CENTRIFUGES

— 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).



— HIGHLIGHTS

- 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
- IVDR-conform according to regulation (EU) 2017/746
- noise level of 48 dB(A) with angle rotor 1611
- impulse button for short centrifugation
- 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

— FEATURES

- metal housing and lid
- viewing port in the lid
- powered lid lock
- lid dropping protection
- emergency lid lock release
- stainless steel chamber
- automatic rotor recognition
- brushless drive
- error display
- imbalance switch-off
- backlit panel with actual values of all parameters
- auditory message after completion of the centrifugation run

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	3
swing-out rotor, 4-places	90°	5,000 min ⁻¹	4 x 100 ml	1494	6
swing-out rotor, 4-places	90°	4,000 min ⁻¹	4 x 100 ml	1624	9
swing-out rotor, 4-places	90°	4,500 min ⁻¹	4 x 100 ml	1324	12
swing-out rotor, 8-places	90°	4,000 min ⁻¹	8 x 15 ml	1611	14
swing-out rotor, 12-places	55° / 60° / 80°	4,000 min ⁻¹	12 x 15 ml	1628	14
swing-out rotor, 8-places	45°	5,000 min ⁻¹	8 x 50 ml	1617	15
swing-out rotor, 6-places	90°	4,000 min ⁻¹	6 x 50 ml	1619	15
swing-out rotor, 2-places	90°	4,000 min ⁻¹	10 plates	1460	16
swing-out rotor, 24-places	90°	13,000 min ⁻¹	24 x 2 ml	1555	16
ANGLE ROTORS					
angle rotor, 24-places	50°	16,000 min ⁻¹	24 x 2 ml	1552	17
angle rotor, 30-places	45°	14,150 min ⁻¹	30 x 2 ml	1553	17
angle rotor, 64-places	45°	13,000 min ⁻¹	64 x 0.2 ml	1551	18
angle rotor, 18-places	45°	14,150 min ⁻¹	18 x 5 ml	1627	18
angle rotor, 6-places	35°	9,000 min ⁻¹	6 x 94 ml	1556	19
angle rotor, 12-places	35°	6,000 min ⁻¹	12 x 15 ml	1613	20
angle rotor, 12-places	35°	12,000 min ⁻¹	12 x 15 ml	1615	21
angle rotor, 8-places	45°	4,500 min ⁻¹	8 x 50 ml	1418	22

SWING-OUT ROTOR, 4-PLACE | 1554

Rotor

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



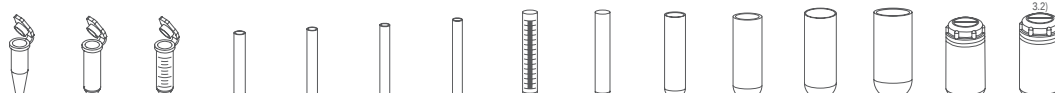
Bucket with clamp lock

Lid bioseal ⁵⁾	1561
Cat. No.	1560
Bucket without clamp lock ¹⁴⁾	
Cat. No.	1565



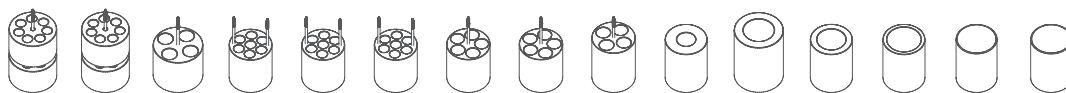
Vessels

capacity in ml	1.5	2.0	5	5	6	7	9	15	15	25	50	85	100	125	150
Ø x L in mm	11x38	11x38	17x59	12x75	12x82	12x100	14x100	17x100	18x102	24x100	34x100	38x101	44x100	51x100	51x116
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	3,124	3,328	3,328
radius in mm	147	103	147	142	142	142	142	142	144	135	138	144	138	147	147
Cat. No.	microliter tubes			tubes ²⁾											-



Adapter

boring Ø x L in mm	11.5 x 39	11.5 x 39	17x52	13.5x60	13.5x60	13.5x60	17.5x60	17.5x60	18.5x74	25.2x66	35.2x69	38.5x74	45.5 x 69	52x77	52x77
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



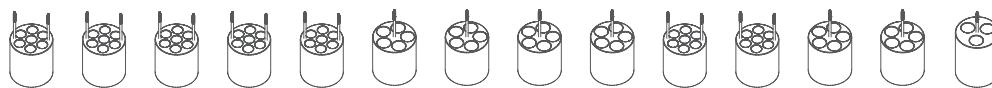
Vessels

capacity in ml	200	1.1–1.4	2.6–3.4	4.9	2.7–3	4–5	4–5.5	7.5–8.2	9–10	10	1.6–5	4–7	4–7	8.5–10	12
Ø x L in mm	56x112	8 x 66	13x65	13x90	11x66	11x92	15x75	15 x 92	16 x 92	15 x 102	13x75	13x100	16x75	16x100	17x102
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													



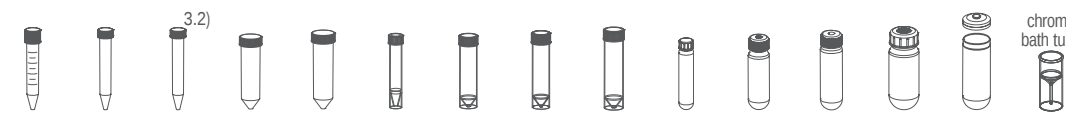
Adapter

boring Ø x L in mm	57x77	13.5x60	13.5x60	13.5x60	13.5x60	13.5x60	17.5x60	17.5x60	17.5x60	17.5x60	13.5x60	13.5x60	17.5x60	17.5x60	17.5x74
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



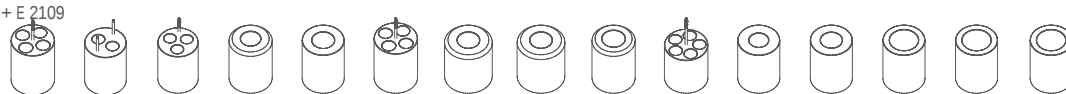
Vessels

capacity in ml	11	15	15	30	50	12	25	30	50	10	30	50	85	94	30
Ø x L in mm	16x110	17x120	17x120	25 x 110	30 x 115	17x100	25x90	15x110	29x115	16x80	26x95	29x107	38x106	38x102	44x105
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

boring Ø x L in mm	17.5x74	17x77	17x77	26x77	30x77	17.5x74	26x65	26x65	30x77	16.5x60	26x74	29x74	38.5 x 74	38.5 x 74	45x71
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 max. RCF	4,500 min ⁻¹ 3,328
max. capacity	4 x 50 ml
run-up run-down, braked in sec	28 31
angle max. noise level	90° 58 dB (A)
temperature in °C ¹⁾	-8
Cat. No.	1554

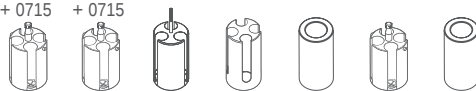
	
Bucket	
Cat. No.	1559



	
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 15 x 102 13 x 75 13 x 100
max. RCF ²⁾	3,215 3,215 3,215 3,328 3,260 3,260 3,215 3,215 3,215 3,215 3,215 3,260 3,260 3,215 3,215
radius in mm	142 142 142 147 144 144 142 142 142 142 142 144 144 144 142 142
Cat. No.	tubes ²⁾ blood collection / urine vessels

	
Adapter	
boring Ø x L in mm	13.4x57.5 13.4x57.5 13.4x57.5 16.4x82 17.5x81 17.5x81 13.4x57.5 13.4x57.5 17.5x81 13.4x57.5 13.4x57.5 17.5x81 17.5x81 13.4x57.5 13.4x57.5
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 12 15 50 12 50
Ø x L in mm	16 x 75 16 x 100 17 x 102 17 x 120 29 x 115 17 x 100 29 x 115
max. RCF ²⁾	3,215 3,260 3,147 3,351 3,305 3,260 3,305
radius in mm	142 144 139 148 146 144 146
Cat. No.	blood- / urine vessels tubes with screw cap

	
Adapter	
boring Ø x L in mm	17.5x81 17.5x81 17.5x74 17x100 30x98 17.5x81 30x98
vessels per rotor	16 16 12 16 4 16 4
Cat. No.	1482A 1482A 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		Bucket	
max. RPM max. RCF	4,500 min ⁻¹ 3,260	Cat. No.	1563
max. capacity	8 x 50 ml		
run-up run-down, braked in sec	28 31		
angle max. noise level	90° 58 dB (A)		
temperature in °C ¹⁾	-8		
Cat. No.	1554		



Vessels			
capacity in ml	12	15	50
Ø x L in mm	17 x 100	17 x 120	29 x 115
max. RCF ²⁾	3,260	3,260	3,260
radius in mm	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
vessels per rotor	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 max. RCF	5,000 min ⁻¹ 4,193
max. capacity	4 x 100 ml
run-up run-down, braked in sec	30 32
angle max. noise level	90° 56 dB (A)
temperature in °C ¹⁾	-10
Cat. No.	1494



Bucket

Cat. No.	1425
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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	12/18 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	2,879
radius in mm	139	139	142	140	140	140	140	140	140	140	140	136	103
Cat. No.	microliter tubes	Rhesus	tubes ²⁾										cyto chambers



Adapter

boring Ø x L in mm	11.2 x 38	11.2 x 38	6.5 x 34	10.5 x 40	13.4 x 50	12.5 x 60	12.5 x 60	17.5 x 84	17.5 x 84	25.5 x 84	35.5 x 84	45.5 x 80	-
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 - 8.2	9 - 10	1.6 - 5	4 - 7	4 - 7	8.5 - 10	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
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
radius in mm	140	140	140	140	140	140	140	140	140	140	140	146
Cat. No.	blood collection / urine vessels											-



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	30 x 90
vessels per rotor	28	28	28	28	28	28	16	28	28	28	28	4
Cat. No.	1438	1438	1441	1438	1438	1441	1439	1438	1438	1441	1441	1443

CYTO

Cyto system available for this model.
More information on [page 180](#)

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 max. RCF	5,000 min ⁻¹ 4,109
max. capacity	4 x 50 ml
run-up run-down, braked in sec	30 32
angle max. noise level	90° 54 dB (A)
temperature in °C ¹⁾	-7
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	2.6–2.9	2.7–3	4–5.5
Ø x L in mm	11x38	11x38	6 x 45	10 x 60	12/13x75	12x82	12x100	14x100	17x100	24x100	34x100	8 x 66	13x65	11x66	15x75
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 23	10.5 x 23	13.4 x 58	12.5 x 42	12.4 x 82.5	15 x 69.5	17.8 x 82.5	25.5 x 82.5	35.5 x 82.5	9 x 41	13.4 x 58	12.5 x 42	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 – 8.2	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	34 x 100	
max. RCF ²⁾	3,941	4,025	4,109	3,969	4,025	4,025	3,969	3,941	4,165	4,053	3,565	4,025	3,941	
radius in mm	141	144	147	142	144	144	142	141	145	145	142	144	141	
Cat. No.	blood collection / urine vessels								tubes with screw cap					

Adapter

boring Ø x L in mm	12.4 x 82.5	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 82.5	17 x 90	30 x 90	25.5 x 72	25.5 x 85	35.5 x 82.5
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 max. RCF	5.000 min ⁻¹ 4.193
max. capacity	4 x 100 ml
run-up run-down, braked in sec	30 32
angle max. noise level	90° 58 dB (A)
temperature in °C ¹⁾	-10
Cat. No.	1494



Bucket

Lid bioseal ⁵⁾	1492
Cat. No.	1495



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	10.7x46	11x38	11x38	6 x 45	10 x 60	12/13x75	12x82	12x100	14x100	17x100	24x100	34x100	38x102	44x100
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	145	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	11.2x38	11.2x38	11.2x38	6.5x34	10.5x40	13.4x45	13.4x45	13.4x45	17.6x89	17.6x89	25.2x77	35.2x77	38.5x92	45.6x98	Spacer
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	2.7–3	4.5–5	2.6–2.9	4.9	4–5.5	7.5–8.2	9–10	10	1.6–7	1.6–7	4–10	4–10	
Ø x L in mm	8 x 66	11x66	11x92	13x65	13x90	15x75	15x92	16 x 92	15 x 102	13x75	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	9x47	13.4x45	13.4x45	13.4x45	13.4x45	15.6x47	15.6x47	17.6x89	17.6x89	13.4x45	13.4x45	16.5x52	16.5x52	
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	chrome bath tube
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	29x107	38x106	44x105	
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	17x90	26x80	30x90	17x80	26x72	29.5x80	16.5x52	26x83	29x93	38.5x92	45.9x98	Spacer
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 max. RCF	4,000 min ⁻¹ 2,665
max. capacity	4 x 50 ml
run-up run-down, braked in sec	20 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.	tubes²⁾												cyto chambers
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Carrier

boring Ø x L in mm	12 x 75	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	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	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 100	13 x 100	16 x 100	26 x 95
max. RCF ²⁾	2,415	2,325	2,325	2,451	2,325	2,325	2,361	2,451	2,308	2,451
radius in mm	135	130	130	137	130	130	132	137	129	137
temperature in °C ¹⁾	-15	-15	-15	-15	-15	-15	-15	-15	-17	-15

Cat. No.	blood collection / urine vessels									-
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Carrier

boring Ø x L in mm	14.6 x 78	17.6 x 78	17.6 x 78	14.6 x 78	17.6 x 78	17.6 x 78	14.6 x 74	13.5 x 78	17.6 x 71.5	26 x 78
vessels per rotor	40	28	28	40	28	28	20	28	16	8
Cat. No.	1741	1742	1742	1741	1742	1742	1370⁴⁾	1739	1369⁴⁾	1745

CYT0

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



Bucket	
Cat. No.	1366



Vessels	
capacity in ml	1.5 2.0 1 4
Ø x L in mm	11 x 38 11 x 38 6 x 45 12 x 60
max. RCF ²⁾	1,968 1,968 1,950 1,932
radius in mm	110 110 109 108
Cat. No.	microliter tubes Rhesus tubes²⁾



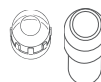
Adapter	
boring Ø x L in mm	11.5 x 38 11.5 x 38 6.5 x 23 12.5 x 44
vessels per rotor	36 36 120 48
Cat. No.	5277 5277 1357 1326

— SWING-OUT ROTOR, 4-PLACE | 1624

Rotor	
max. RPM max. RCF ²⁾	4,000 min ⁻¹ 2,665
max. capacity	4 x 100 ml
run-up run-down, braked in sec	20 25
angle max. noise level	90° 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 4 5 6 7 9 15 25 50 85 100
Ø x L in mm	10.7 x 46 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 106 44 x 100
max. RCF ²⁾	2,379 2,451 2,451 2,594 2,630 2,630 2,558 2,558 2,558 2,540 2,540 2,433 2,415 2,612 2,558
radius in mm	133 137 137 145 147 131 143 143 143 142 142 136 135 146 143
Cat. No.	Pediatric microliter tubes Rhesus tubes²⁾
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 45 13.4 x 45 13.4 x 45 13.4 x 45 17.6 x 89 17.6 x 89 25.2 x 77 35.2 x 75 38.5 x 92 45.9 x 98 Spacer
vessels per rotor	20 20 20 108 36 20 20 20 20 16 16 4 4 4 4
Cat. No.	1351 1351 1351 1339 1343 1383 1383 1383 1383 1329 1329 1330 1331 1396 0761

SWING-OUT ROTOR, 4-PLACE | 1624



Rotor

max. RPM max. RCF	4,000 min ⁻¹ 2,665
max. capacity	4 x 100 ml
run-up run-down, braked in sec	20 25
angle max. noise level	90° 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	2.7–3	4.5–5	2.6–2.9	4.9	4–8.5	7.5–8.2	9–10	10	1.6–5	4–7	4–7	8.5–10
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 45	13.4 x 45	13.4 x 45	13.4 x 45	15.6 x 47	15.6 x 47	17.6 x 89	17.6 x 89	13.4 x 45	13.4 x 45	16.5 x 52	16.5 x 52
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	1329⁴⁾	1383	1383	1348	1348

Vessels

capacity in ml	15	50	12	25	30	50	10	30	50	85	30	chrome bath tube
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	
max. RCF ²⁾	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	131	149	149	141	137	147	146	142	
Cat. No.	tubes with screw cap											0534⁶⁾



Adapter

boring Ø x L in mm	17 x 90	30 x 90	17 x 80	26 x 72	26 x 80	29.5 x 80	16.5 x 52	26 x 83	29 x 93	38.5 x 92	45.9 x 98	Spacer
vessels per rotor	4	4	4	4	4	4	16	4	4	4	4	
Cat. No.	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 max. RCF	4,500 min ⁻¹ 3,328
max. capacity	4 x 100 ml
run-up run-down, braked in sec	27 30
angle max. noise level	90° 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	85	100
Ø x L in mm	10.7 x 46	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 106	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 45	13.4 x 45	13.4 x 45	17.6 x 89	17.6 x 89	25.2 x 77	35.2 x 77	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	2.6–2.9	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	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 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	-
radius in mm	142	141	141	141	141	142	142	140	147	141	141	139	139	147	-
Cat. No.	blood collection / urine vessels														-



Adapter

boring Ø x L in mm	9 x 47	13.4 x 45	13.4 x 45	13.4 x 45	13.4 x 45	15.6 x 47	15.6 x 47	17.6 x 89	17.6 x 89	13.4 x 45	13.4 x 45	16.5 x 52	16.5 x 52	17 x 90
vessels per rotor	28	20	20	20	20	16	16	16	16	20	20	16	16	4
Cat. No.	1457	1383	1383	1383	1383	1459	1459	1329	1329 4)	1383	1383	1348	1348	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 52	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 max. RCF	4,500 min ¹ 3,305
max. capacity	4 x 50 ml
run-up run-down, braked in sec	27 30
angle max. noise level	90° 54 dB (A)
temperature in °C	-6
Cat. No.	1324



Bucket

Cat. No.	1398
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Vessels

											
capacity in ml	9	15	4–4,5	9–10	10	4–7	8,5–10	15	50	12	50
Ø x L in mm	14x100	17x100	15x75	16x92	15x102	16x75	16x100	17 x 120	29 x 115	17 x 100	29 x 115
max. RCF ²⁾	3,192	3,192	2,875	3,192	3,192	3,034	3,034	3,305	3,260	3,192	3,260
radius in mm	141	141	127	141	141	134	134	146	144	141	144
Cat. No.	tubes ²⁾		blood collection / urine vessels					tubes with screw cap			



Adapter

											
boring Ø x L in mm	17.5x81	17.5x81	17.5x81	17.5x81	17.5x81	17.5x81	17.5x81	17x100	30x98	17.5x81	30x98
vessels per rotor	16	16	16	16	16	16	16	16	4	16	4
Cat. No.	1482A	1482A	1482A	1482A	1482A	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 max. RCF	4,000 min ⁻¹ 2,415
max. capacity	8 x 15 ml
run-up run-down, braked in sec	20 20
angle max. noise level	90° 48 dB (A)
temperature in °C ¹⁾	-16
Cat. No.	1611



Vessels

														
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	12/13 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 max. RCF ²⁾	5,000 min ⁻¹ 4,193
max. capacity	12 x 15 ml
run-up run-down, braked in sec	16 16
angle max. noise level	55° / 60° / 80° 54 dB (A)
Cat. No.	1628



Vessels

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	12/13 x 75	17 x 100	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⁾	3,466	3,522	4,193	3,466	3,466	3,522	4,193	3,466	3,522	4,193
radius in mm	124	126	150	124	124	126	150	124	126	150
temperature in °C ¹⁾	-10	-10	-10	-15	-15	-15	-10	-15	-15	-10
Cat. No.	tubes ²⁾			blood collection / urine vessels						



Bucket

boring Ø x L in mm	13.2 x 53	17.5 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	12
Cat. No.	1127-A	1122	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 max. RCF	5,000 min ⁻¹ 3,857
max. capacity	8 x 50 ml
run-up run-down, braked in sec	20 19
angle max. noise level	45° 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 max. RCF	4,000 min ⁻¹ 2,701
max. capacity	6 x 50 ml
run-up run-down, braked in sec	20 22
angle max. noise level	90° 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	

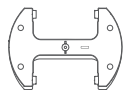


Adapter

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 max. RCF	4,000 min ⁻¹ 2,218
max. capacity	10 plates
run-up run-down, braked in sec	40 45
angle max. noise level	90° 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	128x86x22	128x86x44.5	128x86x46	124x82x20	-
max. RCF ²⁾	2,433	2,433	2,433	2,433	2,433	2,433
radius in mm	136	136	136	136	136	136
Cat. No.	MTP	CP	DWP	MS	PCR plate, 96 wells	PCR strips



Bucket

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

— SWING-OUT ROTOR, 24-PLACE | 1555



Rotor

max. RPM max. RCF	13,000 min ⁻¹ 18,327
max. capacity	24 x 2 ml
run-up run-down, braked in sec	36 31
angle	90°
temperature in °C ¹⁾	3
Cat. No.	1555



Lid bioseal[®],
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	2031⁷⁾	-

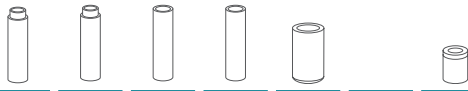
- 1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
- 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with 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		Lid bioseal⁵⁾, phenol-resistant	
max. RPM max. RCF	16,000 min ⁻¹ 24,900	Cat. No.	INCLUSIVE
max. capacity	24 x 2 ml		
run-up run-down, braked in sec	30 29		
angle max. noise level	50° 58 dB (A)		
temperature in °C ¹⁾	2		
Cat. No.	1552		



	
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 46
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 10,2 x 19,3 11,2 x 42,6 11,2 x 39
vessels per rotor	24 24 24 24 24 24 12
Cat. No.	2024 2024 2023 2023 2031⁷⁾ - 0788¹⁷⁾

— ANGLE ROTOR, 30-PLACE | 1553

			
Rotor		Lid bioseal⁵⁾, phenol-resistant	
max. RPM max. RCF	14,150 min ⁻¹ 21,713	Cat. No.	INCLUSIVE
max. capacity	30 x 2 ml		
run-up run-down, braked in sec	35 32		
angle	45°		
temperature in °C ¹⁾	-1		
Cat. No.	1553		



	
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 46
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 10,2 x 19,3 11,2 x 40,9 11,2 x 39
vessels per rotor	30 30 30 30 30 30 15
Cat. No.	2024 2024 2023 2023 2031⁷⁾ - 0788¹⁷⁾

- 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 bioseal⁵⁾,
phenol-resistant

Cat. No.



INCLUSIVE



Vessels

		
capacity in ml	0.2	0.2
Ø x L in mm	6x18	-
max. RCF ²⁾	13,604	13,604
radius in mm	64	8x8
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 bioseal⁵⁾,
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	18
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 max. RCF	9.000 min ⁻¹ 10.595
max. capacity	6 x 94 ml
run-up run-down, braked in sec	36 32
angle max. noise level	35° 60 dB (A)
temperature in °C ¹⁾	0
Cat. No.	1556

+

Lid bioseal⁵⁾,
phenol-resistant

Cat. No.



INCLUSIVE



Vessels															
capacity in ml	1.5	2	15	50	50	85	7.5–8.2	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 max. RCF	6,000 min ⁻¹ 4,146
max. capacity	12 x 15 ml
run-up run-down, braked in sec	15 15
angle max. noise level	35° 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 – 2.9	2.7 – 3	4.5 – 5	4.9	7.5 – 8.2	9 – 10	10
Ø x L in mm	10.7 x 46	11 x 38	11 x 38	10 x 88	12/13 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	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	11.5 x 67.5	13.5 x 59	13.5 x 59	17.7 x 88	13.5 x 59	13.5 x 59	13.5 x 59	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				-	-



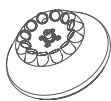
Adapter

boring Ø x L in mm	13.5 x 60	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	6	12	12	6
Cat. No.	1054-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.

— ANGLE ROTOR, 12-PLACE | 1615



Rotor

max. RPM max. RCF	12,000 min ⁻¹ 16,582
max. capacity	12 x 15 ml
run-up run-down, braked in sec	40 40
angle max. noise level	35° 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 - 2.9	2.7 - 3	4.5 - 5	4.9	7.5 - 10	10
Ø x L in mm	10.7 x 46	11 x 38	11 x 38	10 x 88	12/13 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	11.5 x 67.5	13.5 x 59	13.5 x 59	17.7 x 88	13.5 x 59	13.5 x 59	13.5 x 59	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	8.5 - 10	8	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 59	17.7 x 88	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	-	-	-	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 max. RCF	4,500 min ⁻¹ 3,305
max. capacity	8 x 50 ml
run-up run-down, braked in sec	30 31
angle max. noise level	45° 54 dB (A)
temperature in °C ¹⁾	-5
Cat. No.	1418



Vessels

capacity in ml	5	15	1.1–1.4	2.6–2.9	2.7–3	9–10	1.6–5	4–7	8.5–10	12	15	50	12	50	50
Ø x L in mm	12/13x75	17x100	8x66	13x65	11x66	16x92	13x75	13x100	16x100	17x102	17x120	29x115	17x100	29x115	29x107
max. RCF ²⁾	2,762	3,215	2,762	2,762	2,762	3,215	2,762	3,215	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						
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+ 1054-A	+ 0716	+ 1054-A	+ 1054-A	+ 1054-A	+ 0716	+ 1054-A	+ 0716	+ 0716	+ 0716	+ E2109	+ E2110-A	+ 0716			
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Carrier

boring Ø x L in mm	17.4x91	17.4x91	17.4x91	17.4x91	17.4x91	17.4x91	17.4x91	17.4x91	17.4x91	17.4x91	17.4x91	30.2x92	17.4x91	30.2x92	30.2x92
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.

CERTIFICATIONS / REGISTRATIONS

Product certification:



Product registration:

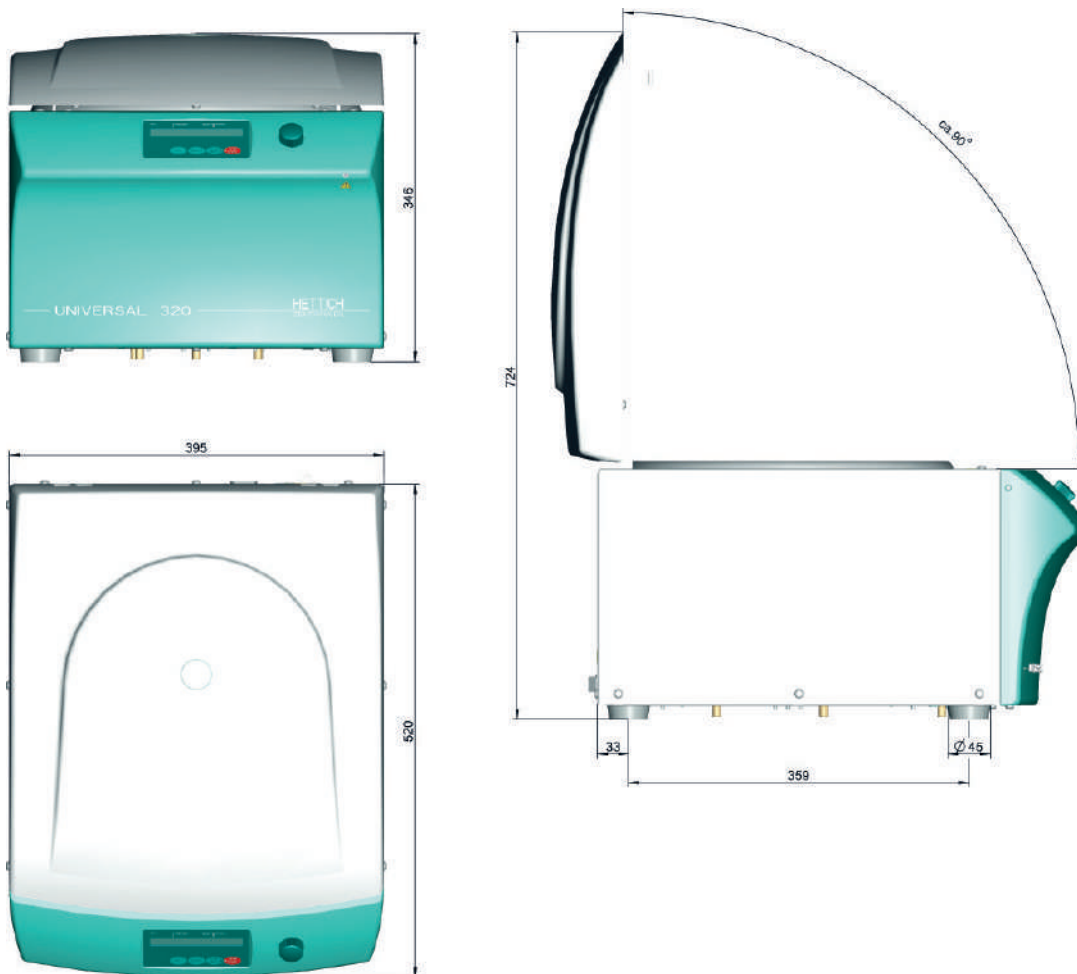


according to regulation (EU) 2017/746

Company certifications:



DIMENSIONS – UNIVERSAL 320



DIMENSIONS – UNIVERSAL 320 R

