

BENCHTOP CENTRIFUGES

— 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).



— HIGHLIGHTS

- RPM: 50 - 15,000 min⁻¹
Adjustable in increments of 10
- RCF: 50 - 24,400
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

— FEATURES

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

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 sec – 99 h: 59 min: 59 s, ∞ continuous run, short cycle mode	1 sec – 99 h: 59 min: 59 s, ∞ continuous run, short cycle mode
dimensions (WxDxH)	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 ~	5650-01	5660-01
frequency	50 – 60 Hz	60 Hz
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.

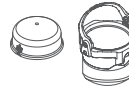
AVAILABLE ROTORS

SWING-OUT ROTORS		angle	max. RPM	max. Capacity	Cat. No.	page
	swing-out rotor, 4-place	90°	4,600 min ⁻¹	4x750 ml	5699-R	3
	swing-out rotor, 4-place	90°	3,800 min ⁻¹	4 x 1,000 ml	5654	10
	swing-out rotor, 6-place	90°	4,000 min ⁻¹	6x290 ml	4446	12
	swing-out rotor, 4-place	90°	2,000 min ⁻¹	4x100 ml	4474	14
	swing-out rotor, 2-place	90°	5,900 min ⁻¹ / 6,200 min ⁻¹	12 plates	5622	14
ANGLE ROTORS						
	angle rotor, 30-place	45°	15,000 min ⁻¹	30x2 ml	4489-A	15
	angle rotor, 6-place	25°	8,500 min ⁻¹ / 9,500 min ⁻¹	6x250 ml	5645	15
	angle rotor, 6-place	35°	11,500 min ⁻¹	6x94 ml	5615	16

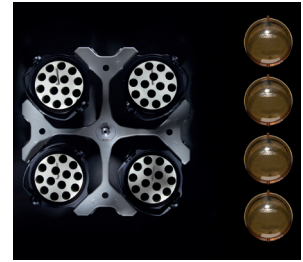
SWING-OUT ROTOR, 4-PLACE | 5699-R



Rotor	
max. RPM max. RCF ²⁾	4,600 min ⁻¹ 4,779
max. capacity	4 x 750 ml
run-up run-down, braked in sec	90 95
angle	90°
temperature in °C ¹⁾	+7
Cat. No.	5699-R



Bucket	
lid bioseal ⁵⁾	4883
Cat. No.	4880



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, 44 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	tubes²⁾

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

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

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

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



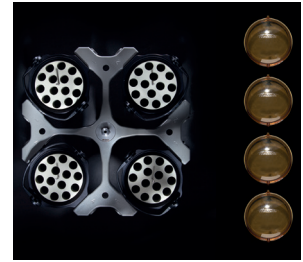
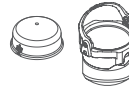
Rotor

max. RPM max. RCF	4,600 min ⁻¹ 4,779
max. capacity	4 x 750 ml
run-up run-down, braked in sec	90 95
angle	90°
temperature in °C ¹⁾	+7
Cat. No.	5699-R



Bucket

lid bioseal ⁵⁾	4883
Cat. No.	4880



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										5127²⁴⁾	-²⁴⁾	Corning®	0551²⁴⁾	0554²⁴⁾	0512²⁴⁾



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.	5647⁴⁾	4840⁴⁾	4833	4848	4834	4840⁴⁾	5647⁴⁾	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	96 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®



Adapter

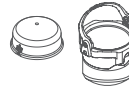
boring Ø x L in mm	98 x 100	98 x 100	-	-	-	-	-	-	-
vessels per rotor	4	4	8	8	4	8	4	4	4
Cat. No.	4845	4845	4849	4849	4852	4851	4831	4831	4831

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.
 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.
 27) RCF values indicated refer only to rotor performance. The max. RCF for the accommodated cell culture flasks is 2,300.

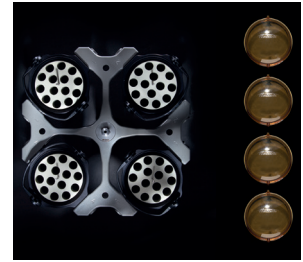
SWING-OUT ROTOR, 4-PLACE | 5699-R



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



Bucket	
lid bioseal ⁵⁾	4883
Cat. No.	4890



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			tubes²⁾							blood collection / urine vessels				

Adapter																
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				


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	4468⁴⁾	4468

Vessels																
capacity in ml		250	290 ^{3,9)}	650	750	175	175	200	225	250	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	96 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.		5127²⁴⁾	-²⁴⁾	0554²⁴⁾	0512²⁴⁾	Falcom[®]	Nalgene[®]	Nunc[®]	Falcom[®]	Corning[®]	Corning[®]	4447	4234-A	blood bags²⁸⁾		

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		8	6	4	4	8	8	8	8	4	4	4	4	4		
Cat. No.		4443	4443	4451	4451	4440	4430	4430	4440	4430	4449	4451	4451	-		

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.
 3,9) When using these tubes, bucket 4890 cannot be closed with lid 4883.
 24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.
 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 max. RCF ²⁾	4,600 min ⁻¹ 4,637
max. capacity	4 x 450 ml
run-up run-down, braked in sec	90 95
angle	90°
temperature in °C ¹⁾	+10
Cat. No.	5699-R






Bucket	
Cat. No.	5691-A




	holder for systems without filter	holder for systems with and without filter
Blood bags		
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



		
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 max. RCF ²⁾	4,600 min ⁻¹ 4,921
max. capacity	12 Arrays
run-up run-down, braked in sec	90 95
angle	90°
temperature in °C ¹⁾	+10
Cat. No.	5699-R





Bucket	
Cat. No.	5636



	TagMan Array
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



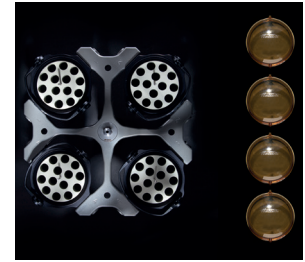
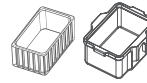
Rotor

max. RPM max. RCF ²⁾	4,600 min ⁻¹ 4,258
max. capacity	4 x 250 ml
run-up run-down, braked in sec	90 95
angle	90°
temperature in °C ¹⁾	+10
Cat. No.	5699-R



Bucket

Adapter	5220-A
Cat. No.	5628⁹⁾



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			tubes²⁾									blood collection / urine vessels		



Adapter

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				5127²⁴⁾



Adapter

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	5266⁴⁾	6338-B	6339-A	5263-A⁴⁾

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



- 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.

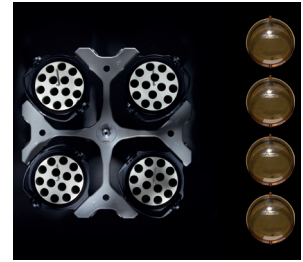
— SWING-OUT ROTOR, 4-PLACE | 5699-R



Rotor	
max. RPM max. RCF	4,600 min ⁻¹ 3,785
max. capacity	4 x 200 ml
run-up run-down, braked in sec	90 95
angle	90°
temperature in °C ¹⁾	+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 ²⁾	3,785 ²⁾	3,785 ²⁾	3,785 ²⁾	3,785 ²⁾
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

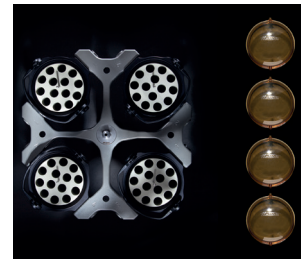
— SWING-OUT ROTOR, 4-PLACE | 5699-R



Rotor	
max. RPM max. RCF	4,600 min ⁻¹ 3,832
max. capacity	20 plates
run-up run-down, braked in sec	90 95
angle	90°
temperature in °C ¹⁾	+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

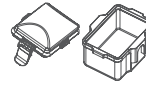
1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with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

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



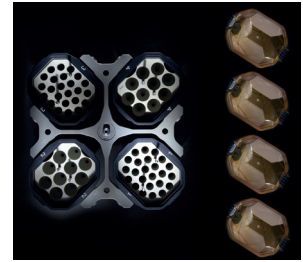
Rotor

max. RPM max. RCF	4,600 min ⁻¹ 4,211
max. capacity	24 plates
run-up run-down, braked in sec	90 95
angle	90°
temperature in °C ¹⁾	+10
Cat. No.	5699-R



Bucket

lid bioseal ⁵⁾	5629
Cat. No.	5628⁵⁾



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



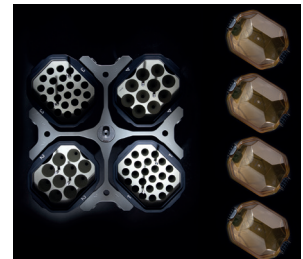
Rotor

max. RPM max. RCF	3,800 min ⁻¹ 2,890
max. capacity	24 plates
run-up run-down, braked in sec	61 57
angle max. noise level	90° 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

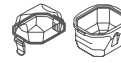
1) For cooled versions: Lowest temperature achievable with precooling and max. speed.

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.

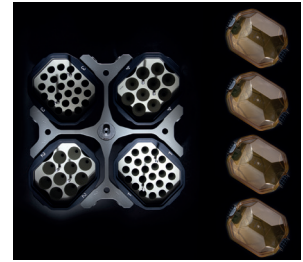
SWING-OUT ROTOR, 4-PLACE | 5654



Rotor	
max. RPM max. RCF	3,800 min ⁻¹ 3,196
max. capacity	4 x 1,000 ml
run-up run-down, braked in sec.	61 57
angle max. noise level	90° 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.	tubes²⁾									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[®]

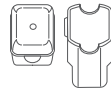
Adapter															
boring Ø x L in mm	17.2 x 46.5	17.2 x 46.5	17.2 x 46.5	13.2 x 42.4	17.2 x 46.5	13.2 x 42.4	13.2 x 42.4	17.2 x 46.5	17.2 x 46.5	17 x 42	17 x 60	30 x 60	62 x 100	62 x 100	62 x 100
vessels per rotor	148	148	148	196	148	196	188	148	148	80	96	40	8	8	8
Cat. No.	5682	5682	5682	5674	5682	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[®]	5127²⁴⁾	-²⁴⁾	4447	Corning[®]	0551²⁴⁾	0554²⁴⁾	0512²⁴⁾	-

Adapter									
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

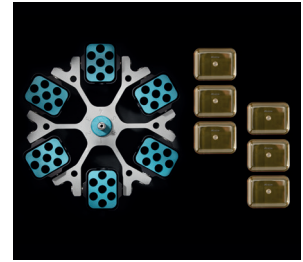
- 1) For cooled versions: Lowest temperature achievable with precooling and max. speed.
- 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with 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 max. RCF	4,000 min ⁻¹ 3,631
max. capacity	6 x 100 ml
run-up run-down, braked in sec.	45 55
angle max. noise level	90° 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		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	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	tubes²⁾

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		240, 240, 96, 96, 120, 120, 120, 120, 72, 72, 30, 12, 6, 6
Cat. No.		5257, 5257, 5281, 5281, 5267, 5227, 5227, 5247¹⁵⁾, 5264, 5248¹⁵⁾, 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⁾		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

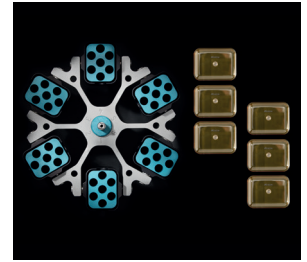
Adapter		
boring Ø x L in mm		11 x 44, 13.5 x 52, 12.5 x 42, 16 x 50, 12.5 x 42, 13.5 x 52, 16 x 50, 17.6 x 86, 17.6 x 86, 13.5 x 52, 13.5 x 52, 16 x 50, 17.5 x 86
vessels per rotor		120, 72, 120, 72, 120, 72, 72, 66, 66, 72, 72, 72, 72
Cat. No.		5267, 5268, 5227, 5264, 5227, 5268, 5264, 5258, 5258, 5268, 5268, 5264, 5248

Vessels			
capacity in ml		15, 30, 50, 12, 30, 50	1–8
Ø x L in mm		17 x 120, 25 x 110, 29 x 115, 17 x 100, 25 x 110, 29 x 115	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		17 x 90, 26 x 86, 30 x 86, 17 x 90, 26 x 86, 36 x 86
vessels per rotor		42, 30, 12, 42, 30, 12
Cat. No.		6306, 5266, 5259, 6306, 5266, 5243, 5280

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 max. RCF	4,000 min ⁻¹ 3,631
max. capacity	6 x 290 ml
run-up run-down, braked in sec	45 55
angle	90°
temperature in °C ¹⁾	-3
Cat. No.	4446

Bucket	
lid bioseal ⁵⁾	5053
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	11 x 66	11 x 66
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.	tubes²⁾								blood collection tubes / 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	12.8x54.5	13.5x60.7	12.8x54.5	13.5x60.7	12.8x54.5
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	3,542	3,488	3,542	3,488	3,488	3,631	3,434
radius in mm	195	195	198	195	195	195	195	172	198	195	198	195	195	203	192
Cat. No.	blood collection tubes / urine tubes											tubes with screw cap			

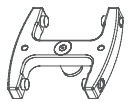
Adapter															
boring Ø x L in mm	13.5x60.7	17.5x60.7	12.8x82	17.5x60.7	17.5x60.7	17.5x60.7	13.5x60.7	12.8x54.5	12.8x82	12.8x60.7	17.5x82	17.5x60.7	17.5x60.7	17x85	25.5x82
vessels per rotor	48	48	72	48	48	48	48	72	72	48	42	48	48	42	24
Cat. No.	5137	5136	5120	5136	5136	5136	5137	5138	5120	5136	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					5127²⁴⁾	-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. 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.
 24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

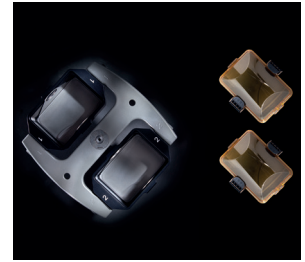
SWING-OUT ROTOR, 2-PLACE | 5622



Rotor	
max. RPM ROTANTA 460 460 R	5,900 min ⁻¹ 6,200 min ⁻¹
max. RCF	5,838 6,446
max. capacity	12 plates
run-up run-down, braked in sec	50 / 52 32 39
angle	90°
temperature in °C ¹⁾	+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 460 460 R	5,838 6,446	5,838 6,446	5,838 6,446	5,838 6,446	5,838 6,446	5,838 6,446	5,838 6,446	5,838 6,446	5,838 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 max. RCF	2,000 min ⁻¹ 984
max. capacity	4 x 100 ml
run-up run-down, braked in sec	17 20
angle max. noise level	90° 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.

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.

— ANGLE ROTOR, 30-PLACE | 4489-A



Rotor

max. RPM max. RCF	15,000 min ⁻¹ 24,400
max. capacity	30 x 2 ml
run-up run-down, braked in sec	73 77
angle max. noise level	45°
temperature in °C ¹⁾	+4

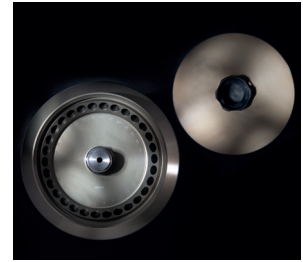
Cat. No. 4489-A

Lid bioseal⁵⁾ 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	6x18	6x45	8x30	8x45	11x38	11x38	10.7x36
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	6x40	6x40	8x40	8x40	-	11.2x40.1	11.2x40.1
vessels per rotor	30	30	30	30	30	30	15

Cat. No. 2024 2024 2023 2023 2031⁷⁾ - 0788

— ANGLE ROTOR, 6-PLACE | 5645



Rotor

max. RPM ROTANTA 460 460 R	8,500 min ⁻¹ 9,500 min ⁻¹
max. RCF	11,228 14,025
max. capacity	6 x 250 ml
run-up run-down, braked in sec	98 / 115 105 / 120
angle max. noise level	25°
temperature in °C ¹⁾	+7

Cat. No. 5645

Lid bioseal⁵⁾

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	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. tubes²⁾ tubes with screw cap 5127²⁴⁾




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) 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.

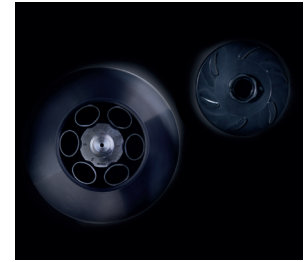
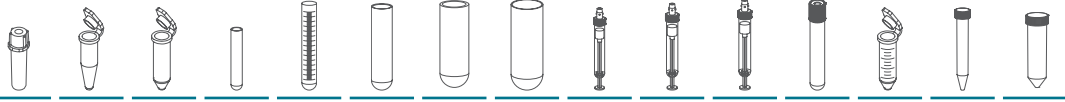
— ANGLE ROTOR, 6-PLACE | 5615




Rotor	
max. RPM max. RCF	11,500 min ⁻¹ 18,038
max. capacity	6 x 94 ml
run-up run-down, braked in sec	66 68
angle	45°
temperature in °C ¹⁾	+6
Cat. No.	5615





Lid bioseal⁵⁾	
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			tubes²⁾				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	26x95	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	38.2x 89.6	38.2x 89.6
vessels per rotor	12	6	6	6	6
Cat. No.	1448	1447	1446	-	-

CERTIFICATIONS / REGISTRATIONS

Product certification:



Product registration:



Company certifications:

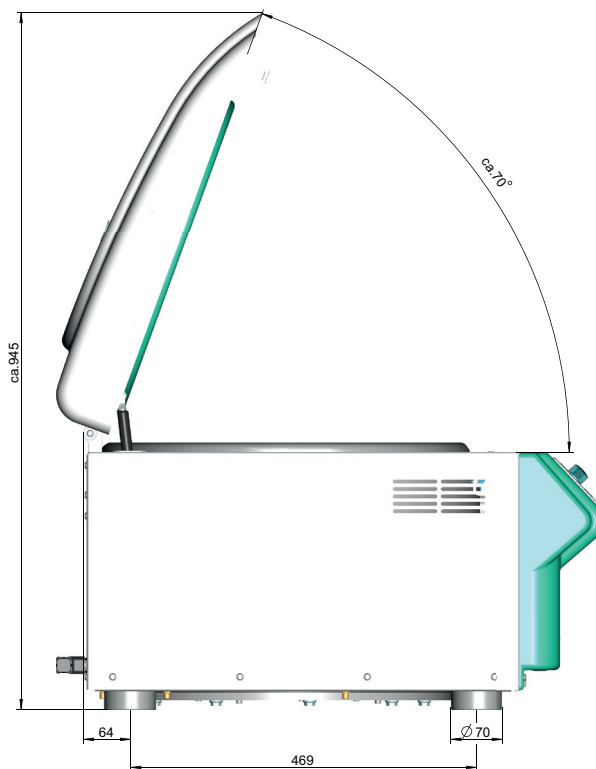
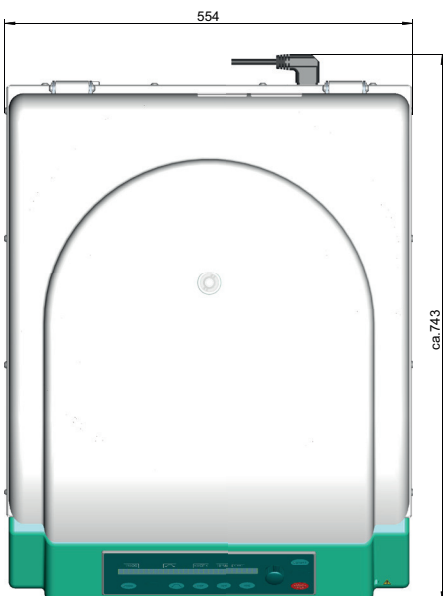


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DIMENSIONS – ROTANTA 460



— DIMENSIONS – ROTANTA 460 R

