

BENCHTOP CENTRIFUGES


ROTINA 420 | 420 R

MANY SOLUTIONS - ONE ROTOR

This compact benchtop centrifuge has been developed for large sample volumes. It has a maximum capacity of 4 x 600 ml bottles, 140 blood tubes, 16 microtiter plates or 52 x 15 ml conical tubes, all on a single cost-effective rotor.

This unit is available with refrigeration and a temperature range from -20 °C to +40 °C (ROTINA 420 R).



HIGHLIGHTS

- RPM: 50 - 11,000 min⁻¹
Adjustable in steps of 10
- RCF: 50 - 16,504
Adjustable in steps of 1
- max. capacity: 4 x 600 ml
- High-performance with first-class equipment
- choice of 5 rotors
- IVD-conform according to directive 98/79/EC
- max. noise level of 51 dB(A) with rotor 4790-A
- easy operation with keypad and control knob
- 98 program memories for more individuality
- 9 individual acceleration and deceleration stages
- model 420 R coolable from -20 bis +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

	ROTINA 420 classic	ROTINA 420 R cooled
voltage *)	200–240 V 1 ~	200–240 V 1 ~
frequency	50–60 Hz	50 Hz
consumption	870 VA	1.600 VA
emission, immunity	EN/IEC 61326-1, class B	EN/IEC 61326-1, class B
max. capacity	4 x 600 ml	4 x 600 ml
max. RPM	15.000 min ⁻¹	15.000 min ⁻¹
max. RCF	24.400	24.400
running time	1 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)	506 x 650 x 423 mm	713 x 654 x 423 mm
weight	approx. 75 kg	approx. 108 kg
noise level	51 dB (A) with rotor 4790-A	50 dB (A) with rotor 4790-A
temperature control, infinitely variable	-	from -20 to +40 °C
Cat. No.	4701	4706
100–127 V 1 ~ / 50–60 Hz *)	4701-01	4706-01
consumption	900 VA	1.850 VA
emission, immunity	FCC class B	FCC class B
weight	approx. 84 kg	approx. 117 kg



*) Other voltages on request.

AVAILABLE ROTORS

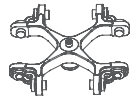
SWING-OUT ROTORS

	angle	max. RPM	max. capacity	Cat. No.	page
 swing-out rotor, 4-place	90°	4,800 min ⁻¹	4x600 ml	4784-A	3
swing-out rotor, 4-place	90°	4,000 min ⁻¹	4x290 ml	4753	5

ANGLE ROTORS

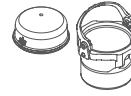
 angle rotor, 4-place	25°	9,500 min ⁻¹	4x250 ml	4795	7
angle rotor, 6-place	45°	11,000 min ⁻¹	6x94 ml	4794	8
 angle rotor, 30-place	45°	15,000 min ⁻¹	30x2 ml	4790-A	8

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



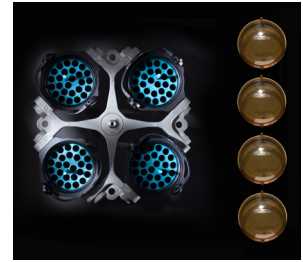
Rotor

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



Bucket

lid bioseal ⁵⁾	4783
Cat. No.	4780



Vessels

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



Adapter

boring Ø x L in mm	11.2x38	11.2x38	11.2x54	11.2x54	13.4x55	13.4x55	13.4x55	13.4x55	17.5x62	26.5x69	36x77	42x76.5	42x76.5	46x76.5	66x103
vessels per rotor	96	96	140	140	104	104	104	104	72	28	16	12	12	8	4
Cat. No.	4773	4773	4761	4761	4762	4762	4762	4762	4763	4764	4765	4766	4766	4767	4768

Vessels

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



Adapter

boring Ø x L in mm	11.2x54	13.4x55	11.2x54	17.5x62	11.2x54	13.4x55	17.5x62	17.5x62	13.4x55	13.7x55	17.5x62	17.5x62	17.5x62	17x52	17x84
vessels per rotor	140	104	140	72	140	104	72	72	104	84	72	24	72	48	52
Cat. No.	4761	4762	4761	4763	4761	4762	4763	4763	4762	4775	4763	4763	4763	4778	4769

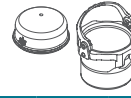
1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.
 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual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

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



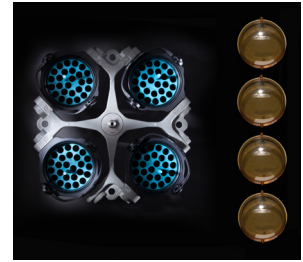
Rotor

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



Bucket

lid bioseal ⁵⁾	4783
Cat. No.	4780



Vessels

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



Adapter

boring Ø x L in mm	30 x 82.5	17.2 x 82.5 ²¹⁾	26.5 x 69	26.5 x 69	30 x 82.5	17.5 x 62	26.5 x 69	30 x 82.5	42 x 76.5	42 x 76.5	61 x 105	61.5 x 110	61.5 x 110	61 x 105	62 x 100
vessels per rotor	20	56	28	28	20	72	28	20	12	12	4	4	4	4	4
Cat. No.	4770	4774	4764	4764	4770 ⁴⁾	4763	4764	4770 ⁴⁾	4766	4766	4776	4777	4777	4776	4771

Vessels

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



Adapter

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

1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.
 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
 3,6) When using these tubes, carrier 4780 cannot be closed with lid 4783.
 4) Please remove the spacer.
 5) Tested by the TÜV in conformity with DIN EN 61010, section 2 - 020.
 13) The screw cap for tube No. 0538 is available with Cat. No. 0539. Dimensions with cap 38 x 110 mm.
 21) Adapter must be loaded as illustrated.
 24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

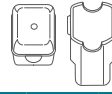
SWING-OUT ROTOR, 4-PLACE | 4753



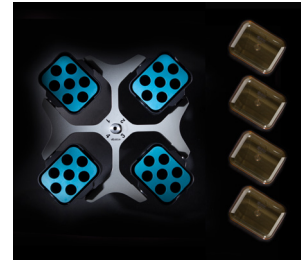
Rotor

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

Bucket



lid	5053
Cat. No.	5051



Vessels

capacity in ml	1.5	2	1.5	2	3	5	6	7	9	15	25	50	100	100
Ø x L in mm	11 x 38	11 x 38	11 x 38	11 x 38	10 x 60	12 x 75	12 x 82	12 x 100	14 x 100	17 x 100	24 x 100	34 x 100	44 x 100	40 x 115
max. RCF ²⁾	1,950 / 2,826	1,950 / 2,826	2,826	2,826	2,737	2,773	2,773	2,755	2,773	2,755	2,755	2,755	2,755	2,755
radius in mm	109 / 158	109 / 158	158	158	153	155	155	154	155	154	154	154	154	154
Cat. No.	microliter tubes				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	160	160	64	64	80	80	80	80	48	48	20	8	4	4
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⁾	2,737	2,808	2,773	2,773	2,773	2,808	2,773	2,755	2,755	2,808	2,755	2,773	2,755
radius in mm	153	157	155	155	155	157	155	154	154	157	154	155	154
Cat. No.	blood collection / urine vessels												



Adapter

boring Ø x L in mm	11 x 44	13.5 x 52	12.5 x 42	16 x 50	12.5 x 42	13.5 x 52	16 x 50	17.6 x 86	17.6 x 86	13.5 x 52	13.5 x 86	16 x 50	17.5 x 86
vessels per rotor	80	48	80	48	80	48	48	44	44	48	48	48	48
Cat. No.	5267	5268	5227	5264	5227	5268	5264	5258	5258	5268	6301	5264	5248

Vessels

capacity in ml	15	30	50	12	50	1–8
Ø x L in mm	17 x 120	25 x 110	29 x 115	17 x 100	29 x 115	simple / multiple
max. RCF ²⁾	2,898	2,755	2,826	2,898	2,755	1,735 / 2,737
radius in mm	162	154	158	162	154	97 / 153
Cat. No.	tubes with screw cap					cyto chambers



Adapter

boring Ø x L in mm	17 x 90	26 x 66	30 x 86	17 x 90	36 x 86	-
vessels per rotor	28	20	8	28	8	8
Cat. No.	6306	5266	5259	6306	5243	5280

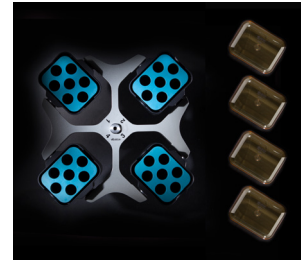
1) Lowest attainable temperature in precooled refrigerated centrifuges at max. speed. Lower temperatures can be attained by reducing the speed.
 2) Please note that the RCF values indicated refer only to rotor performance. The max. permissible RCF of tubes used should be verified with the individual manufacturers. The max. RCF for glass tubes annotated with footnote 2) is 4,000.
 3.7) When using these tubes, bucket 4780 or 5051 cannot be closed with lid 4783 or 5053.
 15) Also available with decanting aid. (Cat. No. 5247-91 or 5248-91).

SWING-OUT ROTOR, 4-PLACE | 4753



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

Bucket	
lid bioseal ⁵⁾	5093
Cat. No.	5092



Vessels															
capacity in ml	5	6	7	15	25	50	100	100	250	1.1-1.4	2.6-3.4	2.7-3	4-5.5	4.5-5	4.9
Ø x L in mm	12x75	12x82	12x100	17x100	24x100	34x100	44x100	40x115	65x115	8 x 66	13 x 65	11 x 66	15x75	11x92	13x90
max. RCF ²⁾	3,005	3,005	3,005	2,952	2,898	2,952	2,952	2,952	3,095	2,540	2,540	2,540	2,952	3,005	2,952
radius in mm	168	168	168	165	162	165	165	165	173	142	142	142	165	168	165
Cat. No.	tubes²⁾									blood collection / urine vessels					

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	12.8x54.5	12.8x54.5	12.8x54.5	17.5x60.7	12.8x82	13.5x60.7
vessels per rotor	48	48	48	32	16	4	4	4	4	48	48	48	32	48	32
Cat. No.	5128	5128	5120	5136	5122	5124	5125	5126	1791	5138	5138	5138	5136	5120	5137

Vessels															
capacity in ml	7.5-8.5	9-10	10	1.6-5	4-7	4-7	8.5-10	8	15	50	12	25	30	50	10
Ø x L in mm	15x92	16x92	15x102	13x75	13x100	16x75	16x100	16x125	17x120	29x115	17x100	25x90	25x110	29x115	16 x 80
max. RCF ²⁾	2,952	2,952	2,952	2,540	3,005	2,952	2,952	3,059	3,095	3,095	3,005	2,826	2,898	3,023	2,952
radius in mm	165	165	165	142	168	165	165	171	173	173	168	158	162	169	165
Cat. No.	blood collection / urine vessels									tubes with screw cap					

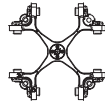
Adapter															
boring Ø x L in mm	17.5x60.7	17.5x60.7	17.5x60.7	12.8x54.5	12.8x82	17.5x60.7	17.5x60.7	17.5x82	17x85	30x85	17.5x82	26x73	25.5x82	30x99	17.5x60.7
vessels per rotor	32	32	32	48	48	32	32	28	28	8	28	12	16	8	32
Cat. No.	5136	5136	5136	5138	5120	5136	5136	5121³⁾	5129	5123	5121	5134	5122	5135	5136

Vessels		
capacity in ml	250	290
Ø x L in mm	61 x 122	62 x 137
max. RCF ²⁾	3,095	3,095
radius in mm	173	173
Cat. No.	5127²⁴⁾	-²⁴⁾

Adapter		
boring Ø x L in mm	66x103	66x103
vessels per rotor	4	4
Cat. No.	6319	6319

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

— SWING-OUT ROTOR, 4-PLACE | 4784-A



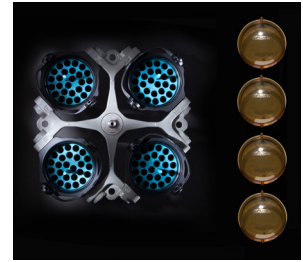
Rotor

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



Bucket

Cat. No.	4782
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Plates

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



Adapter

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

— ANGLE ROTOR, 4-PLACE | 4795



Rotor

max. RPM max. RCF	9,500 min ⁻¹ 12,007
max. capacity	4x250 ml
run-up run-down, braked in sec	45 55
angle	25°
temperature in °C ¹⁾	+2
Cat. No.	4795



Vessels

capacity in ml	15	25	94	15	50	10	30	50	85	94	250
Ø x L in mm	17x100	24x100	38x102	17x120	29x115	16x80	26x95	29x107	38 x 106	38 x 102	61 x 122
max. RCF ²⁾	11,301	10,897	10,292	10,998	10,090	11,402	10,897	10,090	10,292	10,292	12,007
radius in mm	112	108	102	109	100	113	108	100	102	102	119
Cat. No.	tubes²⁾			tubes with screw cap							5127²⁴⁾



Adapter

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

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

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

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

— ANGLE ROTOR, 6-PLACE | 4794



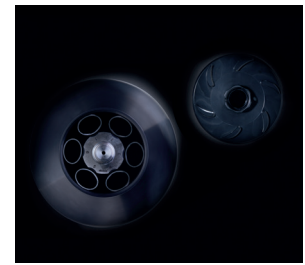
Rotor

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



Lid bioseal⁹⁾

Cat. No.	INCLUSIVE
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Vessels

capacity in ml	1.5 – 2	3	15	25	50	94	7.5 – 10	5	15	50	10	30	50	85	94	
Ø x L in mm	11 x 38	10 x 60	17 x 100	24 x 100	34 x 100	38 x 102	15 x 102 / 16 x 92 ²⁾	17 x 59	17 x 120	29 x 115	16 x 80	26 x 95	29 x 107	38 x 106	38 x 102	
max. RCF ²⁾	15,828	15,828	15,557	15,151	16,233	16,504	15,557	15,422	15,828	16,098	15,557	15,151	15,828	16,504	16,504	
radius in mm	117	117	115	112	120	122	115	114	117	119	115	112	117	122	122	
Cat. No.	-	tubes ²⁾					-	-	tubes with screw cap							



Adapter

boring Ø x L in mm	11.4 x 39	11.4 x 39	17.5 x 92	26 x 85	35 x 89	38.2 x 89.6	17.5 x 92	17 x 51	17 x 106	29.8 x 97	16.5 x 74	26 x 85	29 x 92	38.2 x 89.6	38.2 x 89.6
vessels per rotor	24	24	6	6	6	6	6	6	6	6	12	6	6	6	6
Cat. No.	1449	1449	1451	1447	1463	-	1451	1476	1466	1454	1448	1447	1446	-	-

— ANGLE ROTOR, 30-PLACE | 4790-A



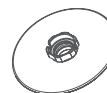
Rotor

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



Lid bioseal⁹⁾, phenol-resistant

Cat. No.	INCLUSIVE
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Vessels

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



Adapter

boring Ø x L in mm	6 x 40	6 x 40	8 x 40	8 x 40	-	11.2 x 40.9	11.2 x 40.9
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 the TÜV in conformity with DIN EN 61010, section 2 - 020.
 7) For centrifugation at high speeds, we recommend to use form-fitting, phenol-resistant adapters. Cat. No. 2031.
 17) Packaging unit 15 pieces.

CERTIFICATES / REGISTRATIONS



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DIMENSIONS

