

Benchtop centrifuges

ROTINA 420 | 420 R

One rotor – many solutions

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 - 15,000 min⁻¹
Adjustable in increments of 10
- RCF: 50 - 24,400
Adjustable in steps of 1
- max. capacity: 4 x 600 ml
- High-performance with first-class equipment
- choice of 5 rotors
- IVDR-conform according to regulation (EU) 2017/746
- 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 10 deceleration stages
- model 420 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

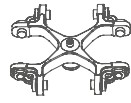
	ROTINA 420 non-refrigerated	ROTINA 420 R refrigerated
voltage *)	200–240 V 1 ~	200–240 V 1 ~
frequency	50–60 Hz	50 Hz
consumption	870 VA	1,600 VA
emission, immunity	EN/IEC 61326-1, class B	EN/IEC 61326-1, class B
max. capacity	4 x 600 ml	4 x 600 ml
max. RPM	15,000 min ⁻¹	15,000 min ⁻¹
max. RCF	24,400	24,400
running time	1 – 99 h: 59 min: 59 s, ∞ continuous run, short cycle mode	1 – 99 h: 59 min: 59 s, ∞ continuous run, short cycle mode
dimensions (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.

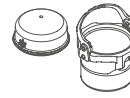
Available rotors

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	4
ANGLE ROTORS						
	angle rotor, 4-place	25°	9,500 min ⁻¹	4x250 ml	4795	6
	angle rotor, 6-place	45°	11,000 min ⁻¹	6x94 ml	4794	7
	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	4x600 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 with clamp lock	
lid bioseal ⁵⁾	4783
Cat. No.	4780



Bucket without clamp lock¹⁴⁾	
Cat. No.	4785



	microliter tubes							tubes ²⁾							
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	4,534	4,534	4,534	4,534
radius in mm	178	178	178	178	178	178	178	178	178	178	177	176	176	176	176
Adapter															
boring Ø x L in mm	11.2 x 38	11.2 x 38	11.2 x 54	11.2 x 54	13.4 x 55	13.4 x 55	13.4 x 55	13.4 x 55	17.5 x 62	26.5 x 69	36 x 77	42 x 76.5	42 x 76.5	46 x 76.5	66 x 97
vessels per rotor	96	96	140	140	104	104	104	104	72	28	16	12	12	8	4
Cat. No.	4773	4773	4761	4761	4762A	4762A	4762A	4762A	4763A	4764	4765	4766	4766	4767	4768

	blood collection / urine vessels													-	tubes with screw cap
Vessels															
capacity in ml	1.1-1.4	2.6-3.4	4-5.5	4.5-5	4.9	7.5-8.2	9-10	1.6-7	1.6-7	4-7	8	8.5-10	15	50	12
Ø x L in mm	8 x 66	13 x 65	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 120	29 x 115	17 x 100
max. RCF ²⁾	4,585	4,585	4,585	4,585	4,585	4,585	4,585	4,720	4,720	4,585	4,585	4,585	4,740	4,688	4,688
radius in mm	178	178	178	178	178	178	178	178	178	178	178	178	184	182	182
Adapter															
boring Ø x L in mm	11.2 x 54	13.4 x 55	17.5 x 62	11.2 x 54	13.4 x 55	17.5 x 62	17.5 x 62	13.4 x 54	13.7 x 54	17.5 x 62	17.5 x 62	17.5 x 62	17 x 84	30 x 82.5	17.2 x 58.5
vessels per rotor	140	104	72	140	104	72	72	104	84	72	24	72	52	20	56
Cat. No.	4761	4762A	4763A	4761	4762A	4763A	4763A	4762A	4775A	4763A	4763A	4763A	4769A	4770A	4774A

	tubes with screw cap							Falcon	Nalgene	Nunc ^{3,6)}	Falcon	5127 ²⁴⁾	- ²⁴⁾	- ²⁴⁾	0551 ²⁴⁾
Vessels															
capacity in ml	25-30	50	10	30	50	85	94	175	175	200	225	250	400	400	600
Ø x L in mm	25 x 90/110	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	62 x 122	81 x 136	84 x 134	93 x 134
max. RCF ²⁾	4,585	4,688	4,585	4,585	4,688	4,534	4,534	4,740	4,740	4,740	4,740	4,740	4,740	4,740	4,740
radius in mm	178	182	178	178	182	176	176	184	184	184	184	184	184	184	184
Adapter															
boring Ø x L in mm	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	85 x 100	85 x 100	94 x 99
vessels per rotor	28	20	72	28	20	12	12	4	4	4	4	4	4	4	4
Cat. No.	4764	4770A⁴⁾	4763A	4764	4770A⁴⁾	4766	4766	4776	4777	4777	4776	4771	4772	4772	-

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

	microliter tubes				tubes ²⁾									
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



Adapter

boring Ø x L in mm	12.5 x 37	12.5 x 37	11.5 x 50	11.5 x 50	11 x 44	12.5 x 39.5	12.5 x 39.5	12.5 x 82.5	16 x 50	17.5 x 82.5	26 x 82.5	36 x 82.5	45.5 x 82.5	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

	blood collection / urine vessels								tubes with screw cap			cyto chambers	
capacity in ml	1.1–1.4	2.6–3.4	2.7–3	4–5.5	4.5–5	4.9	7.5–8.2	9–10	10	1.6–5	4–7	8.5–10	1–8
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	16 x 75	16 x 100	simple / multiple
max. RCF ²⁾	2,737	2,808	2,773	2,773	2,773	2,808	2,773	2,755	2,755	2,808	2,773	2,755	1,735 / 2,737
radius in mm	153	157	155	155	155	157	155	154	154	157	155	154	97 / 153



Adapter

boring Ø x L in mm	11 x 41.5	13.5 x 52	12.5 x 37	16 x 50	12.5 x 37	13.5 x 52	16 x 50	17.6 x 82.5	17.6 x 82.5	13.5 x 52	16 x 50	17.5 x 82.5	-
vessels per rotor	80	48	80	48	80	48	48	44	44	48	48	48	8
Cat. No.	5267	5268	5227	5264	5227	5268	5264	5258	5258	5268	5264	5248	5280

Vessels

	tubes with screw cap					
capacity in ml	15	30	50	12	30	50
Ø x L in mm	17 x 120	25 x 110	29 x 115	17 x 100	25 x 110	29 x 115
max. RCF ²⁾	2,898	2,755	2,826	2,898	2,755	2,755
radius in mm	162	154	158	162	154	154



Adapter

boring Ø x L in mm	17 x 90	26 x 82.5	30 x 90	17 x 90	26 x 82.5	36 x 82.5
vessels per rotor	28	20	8	28	20	8
Cat. No.	6306	5266	5259	6306	5266	5243

CYTO

Cyto system available for this model. More information on page 184

- 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 or 5051 cannot be closed with the lid.
- 4) Please remove the spacer.
- 5) Tested by the TÜV in conformity with DIN EN 61010, section 2-020.
- 14) With the E3905 add-on kit and the 4783 lid, the 4785 carrier can be converted at a later time to a 4780 carrier with single-hand clamp lock.
- 21) Adapter must be loaded as illustrated.
- 24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.
- 29) Suitable for blood collection systems with a lid larger than 17 mm in diameter.

Swing-out rotor, 4-place | 4753



Rotor

max. RPM max. RCF	4,000 min ¹⁾ 3,095
max. capacity	4 x 250 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

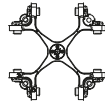


	tubes ²⁾									blood collection / urine vessels					
Vessels															
capacity in ml	5	6	7	15	25	50	100	100	250	1.1–1.4	2.6–2.9	2.7–3	4–4.5	4.5–5	4.9
Ø x L in mm	12x75	12x82	12x100	17x100	24x100	34x100	44x100	40x115	65x115	8 x 66	13 x 65	11x66	15x75	11x92	13x90
max. RCF ²⁾	3,005	3,005	3,005	2,952	2,898	2,952	2,952	2,952	3,095	2,540	2,540	2,540	2,952	3,005	2,952
radius in mm	168	168	168	165	162	165	165	165	173	142	142	142	165	168	165
Adapter															
boring Ø x L in mm	12.8x42	12.8x42	13.2x79.5	17.5x56.7	25.5x75	35.5x77.5	45.5x85	42x76.5	66x103	12.8x54.5	12.8x54.5	12.8x54.5	17.5x56.7	13.2x79.5	13.5x56.7
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

	blood collection / urine vessels							tubes with screw cap							5127 ²⁴⁾
Vessels															
capacity in ml	7.5–8.2	9–10	10	1.6–5	4–7	4–7	8.5–10	15	50	12	25	30	50	10	250
Ø x L in mm	15x92	16x92	15x102	13x75	13x100	16x75	16x100	17x120	29x115	17x100	25x90	25x110	29x115	16x80	61x122
max. RCF ²⁾	2,952	2,952	2,952	2,540	3,005	2,952	2,952	3,095	3,095	3,005	2,826	2,898	3,023	2,952	3,095
radius in mm	165	165	165	142	168	165	165	173	173	168	158	162	169	165	173
Adapter															
boring Ø x L in mm	17.5x56.7	17.5x56.7	17.5x56.7	12.8x54.5	13.2x79.5	17.5x56.7	17.5x56.7	17x85	30x85	17.5x85	26x73	25.5x75	30x99	17.5x57.7	62x90
vessels per rotor	32	32	32	48	48	32	32	28	8	28	12	16	8	32	4
Cat. No.	5136	5136	5136	5138	5120	5136	5136	5129	5123	5121	5134	5122	5135	5136	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.
 5) Tested by the TÜV in conformity with DIN EN 61010, section 2-020.
 24) At temperatures of over +40 °C and / or when not filled to capacity, bottles may warp during centrifugation.

Swing-out rotor, 4-place | 4784-A

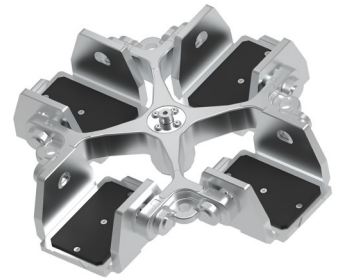


Rotor

max. RPM 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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	MTP	MTP	CP	DWP	MS	Microtest plate	PCR plate 96 wells	PCR strips
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
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



	tubes ²⁾			tubes with screw cap					5127 ²⁴⁾
Vessels									
capacity in ml	15	25	94	10	30	50	85	85	250
Ø x L in mm	17x100	24x100	38x106	16x80	26x95	29x107	38 x 106	38 x 106	62 x 122
max. RCF ²⁾	11,301	10,897	10,292	11,402	10,897	10,090	10,292	10,292	12,007
radius in mm	112	108	102	113	108	100	102	102	119
Adapter									
boring Ø x L in mm	17.6x83	26x80	38.6x88	16.6x70	26x80	29x90	38.6 x 88	38.6 x 88	61.5x109
vessels per rotor	28	12	4	32	12	4	4	4	4
Cat. No.	5646	5642	5644	5641	5642	5643	5644	5644	-

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 bioseal⁵⁾

Cat. No. **INCLUSIVE**



Vessels

	microliter tubes			tubes ²⁾						blood collection / urine vessels				-
capacity in ml	1.5	2	3	6	15	25	50	85	94	7.5 – 8,2	9 – 10	10	8.5 – 10	5
Ø x L in mm	11 x 38	11 x 38	10 x 60	17 x 100	17 x 100	24 x 100	34 x 100	38 x 106	38 x 102	15 x 92	16 x 92	15 x 102	16 x 100	17 x 51
max. RCF ²⁾	15,828	15,828	15,828	15,557	15,557	15,151	16,233	16,504	16,504	15,557	15,557	15,557	15,557	16,504
radius in mm	117	117	117	115	115	112	120	122	122	115	115	115	117	122



Adapter

boring Ø x L in mm	11.4 x 39	11.4 x 39	11.4 x 39	17,5 x 91,5	17,5 x 91,5	26 x 85	35 x 89,3	38,2 x 89,6	38,2 x 89,6	17,5 x 91,5	17,5 x 91,5	17,5 x 91,5	17,5 x 91,5	17 x 51
vessels per rotor	24	24	24	6	6	6	6	6	6	6	6	6	6	6
Cat. No.	1449	1449	1449	1451	1451	1447	1463	-	-	1451	1451	1451	1451	1476

tubes with screw cap

Vessels

capacity in ml	4	15	50	10	30	50	85
Ø x L in mm	12 x 40	17 x 120	29 x 115	16 x 80	26 x 95	29 x 107	38 x 106
max. RCF ²⁾	15,557	15,828	16,098	15,557	15,151	15,828	16,504
radius in mm	115	117	119	115	112	117	122



Adapter

boring Ø x L in mm	15,6 x 30	17 x 106	29,8 x 96,7	16,5 x 74	26 x 85	29 x 92	38,2 x 89,6
vessels per rotor	24	6	6	12	6	6	6
Cat. No.	1403	1466	1454	1448	1447	1446	-

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

— 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 bioseal⁵⁾, phenol-resistant

Cat. No.



INCLUSIVE



microliter tubes



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⁾	24,400	24,400	24,400	24,400	24,400	24,400
radius in mm	97	97	97	97	97	97



Adapter



boring Ø x L in mm	6x40	6x40	8x40	8x40	10.2x19.3	11.2x40.9
vessels per rotor	30	30	30	30	30	30

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 the TÜV in conformity with DIN EN 61010, section 2-020.

Certifications / Registrations

Product certification:



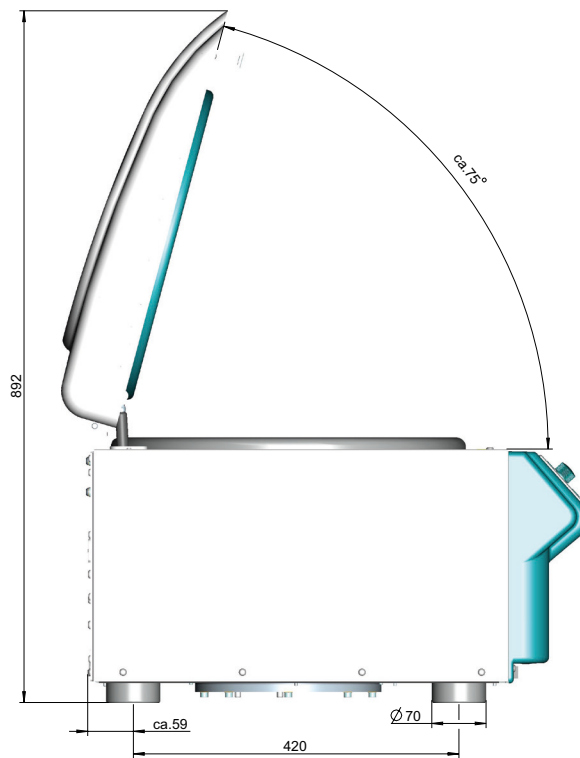
Product registration:



Company certifications:



Dimensions | ROTINA 420



— Dimensions | ROTINA 420 R

