



**CONTROLTECNICA**

**GYROZEN<sup>®</sup>**

Product Guide 2015



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# Centrifuges

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**GYROZEN®**

Designed to perfectly meet your needs.

GYROZEN®



**THE BEST  
FUNCTIONAL QUALITY**

- ✓ Manufactured and tested to IEC standards, stable spinning operation within +/-2% variation
- ✓ Steady and soft deceleration with dynamic brake technology
- ✓ Unique internal air flow design preventing from sample heating
- ✓ High-capacity, strong compressor ensures fast cooling of chamber and samples
- ✓ Fast cooling function to 4°C in 5 minutes for fast start up of cooled samples
- ✓ Automatic rotor identification
- ✓ Automatic RPM/RCF conversion



**SAFETY and  
ROBUSTNESS**

- ✓ Sturdy structured, two or three layered lid for noise-minimized and safe operation
- ✓ Safety lid lock scheme for safe and reliable work environment
- ✓ Lid-drop protection protecting the operator and samples
- ✓ Automatic rotor identification for safe operation
- ✓ Automatic detection and warning for imbalance, excess speed and over-heating
- ✓ Emergency lid-lock release for power blackout or sudden stoppage
- ✓ The eco-friendly compressor-off function on when lid is open
- ✓ The aerosol tight buckets and rotors to prevent contamination
- ✓ Autoclavable and corrosion-free rotors



## Wide range of modern centrifuges for a wide variety of laboratory applications



### CONVENIENCE IN OPERATION

- ✓ Soft touch button/screen with intuitive controls
- ✓ Highly legible blue and white LCD display
- ✓ Time control functions of pulse, timed and continuous
- ✓ Automatic RPM/RCF conversion
- ✓ Easy to check actual rotation through the viewing port in the lid
- ✓ Program memory up to 100 (or 10) programs
- ✓ Automatic rotor identification
- ✓ Automatic lid release at the completion of spinning
- ✓ A large assortment of rotors, buckets and adaptors for diverse applications



### EASY CUSTOMIZATION

- ✓ Any rotors, sample containers and adaptors can be customized upon specified requirement
- ✓ High flexibility of structural & functional modifications



### CERTIFICATES AND REGISTRATIONS

- ✓ Accredited with ISO 9001, ISO 13485, and KGMP
- ✓ Comply with CE conformity
- ✓ Approved as Class IIa medical products (MD406 and MD416 only)

## Product Range
































































## Product Selection Guide by Max Speed & Sample Container

Centrifuges		Micro Centrifuges				Multi-Purpose, High-Speed Centrifuges							Clinical, Low-Speed Centrifuges		
						Benchtop			Floor Stand						
						Mid Capacity			Large Capacity						
		mini	1524	1536	1730R	1248	1248R	1580	1580R	1236R	1736R	2236R	1096R	406	416
Refrigeration		p15-16	p17-18	p19-20	p21-22	p23-34			p35-40		p41-48	p49-58	p59-60	p61-66	
<b>Max. Force</b>															
Fixed Angle Rotor	Max. 2,000 xg													●	
	Max. 2,700 xg														●
	Max. 12,300 xg	●													
	Max. 14,980 xg													●	
	Max. 15,520 xg					●									
	Max. 16,500 xg						●			●					
	Max. 21,200 xg		●	●				●							
	Max. 25,900 xg									●					
	Max. 27,200 xg					●									
	Max. 32,300 xg										●				
Max. 54,111 xg											●				
Swing-out Rotor	Max. 2,800 xg														●
	Max. 3,100 xg									●	●				
	Max. 3,600 xg														
	Max. 4,410 xg														
	Max. 5,300 xg					●	●	●	●	●			●		
<b>Sample Container / Max. Force</b>															
Micro Tube	PCR strip	○	○	○	○										
	0.2/0.5 ml	○	○	○	○	○	○	○	○	○	○	○			
	1.5/2.0 ml	○	○	○	○	●	●	●	●	●	○	○			○
	Micro filter tube		○	○	○	○	○	○	○	○	○	○			
Tube	3/4/5 ml					●	●	●	●	●	○	○	○	○	○
	7 ml					○	○	○	○	○					○
	10/15 ml					●	●	●	●	●	●	○	○	●	●
	15 ml conical					●	●	●	●	●	●	○	○	●	●
	50 ml					●	●	●	●	●	●	○	○	●	●
	50 ml conical					●	●	●	●	●	●	○	○	●	●
	85 ml					●	●	●	●	●	●	○	○	●	●
	100 ml					○	○	○	○	○					○
	100 ml conical glass												○		
	250 ml					○	○	○	○	○	●	●	●		
	250 ml conical					○	○	○	○	○					
	500 ml							○	○		○	○	●		
750 ml							○	○				○			
1,000 ml											○				
Plate	PCR plate					○	○	○	○	○	○	○			○
	Micro assay plate					○	○	○	○	○	○	○			○
	Tissue culture plate					○	○	○	○	○	○	○			○
	Deep well plate					○	○	○	○	○	○	○			○
	Filter set plate												○		
Syringe	10 / 20 / 60 ml					○	○	○	○	○					
Blood Bag	Double 200 / 400 ml											○			







○ Only for fixed angle rotors   ○ Only for swing-out rotors   ● Both for fixed angle and swing-out rotors

## Rotor Availability (Large Capacity / Multi-Purpose / Clinical, Low-Speed Centrifuges)







Large Capacity, High-Speed	1736R 	Rotor Cat. No.	GRF-L-s0.2-64	GRF-L-m2.0-30	GRF-L-15-12	GRF-L-c15-12	GRF-L-50-6	GRF-L-c50-6	GRF-L-50-8	GRF-L-85-6	GRF-L-250-6	GRF-L-500-6	
		Bucket Cat. No.	-	-	-	-	-	-	-	-	-	-	-
		Max. Capacity	64 x 0.2 ml	30 x 2.0 ml	12 x 15 ml	12 x 15 ml conical	6 x 50 ml	6 x 50 ml conical	8 x 50 ml	6 x 85 ml	6 x (250 & 15 ml)	6 x 500 ml	
		Shape											
		Max. RPM/RCF	12,000/9,494(max), 10,800(3x)rot	17,000/31,147	17,000/32,310	15,000/25,910	17,000/32,310	15,000/24,753	15,000/25,910	15,000/25,029	10,000/14,981(250), 14,670(15)	8,000/11,305	
		Hole Diameter (mm)	6.5	11.1	17	17	29.5	29.5	29.5	38.3	62 (17)	70	
	Max. Height for Tube fit (mm)	16	52	125	125	120	125	120	125	130 (15 ml : 120)	167		
	2236R 	Rotor Cat. No.	GRF-L-s0.2-64	GRF-L-m2.0-30	GRF-L-15-12	GRF-L-c15-12	GRF-L-50-6	GRF-L-c50-6	GRF-L-50-8	GRF-L-85-6	GRF-L-250-6	GRF-L-500-6	
		Bucket Cat. No.	-	-	-	-	-	-	-	-	-	-	
		Max. Capacity	64 x 0.2 ml	30 x 2.0 ml	12 x 15 ml	12 x 15 ml conical	6 x 50 ml	6 x 50 ml conical	8 x 50 ml	6 x 85 ml	6 x (250 & 15 ml)	6 x 500 ml	
		Shape											
		Max. RPM/RCF	12,000/9,494(max), 10,800(3x)rot	22,000/52,163	20,000/44,720	20,000/46,062	22,000/54,111	17,000/31,793	20,000/46,062	20,000/44,496	10,000/25,319(250), 24,800(15)	10,000/17,664	
Hole Diameter (mm)		6.5	11.1	17	17	29.5	29.5	29.5	38.3	62 (17)	70		
1096R 	Rotor Cat. No.									GRF-L-250-6	GRF-L-500-6		
	Bucket Cat. No.									-	-		
	Max. Capacity									6 x (250 & 15 ml)	6 x 500 ml		
	Shape												
	Max. RPM/RCF									10,000/14,981(250), 14,670(15)	8,000/11,305		
	Hole Diameter (mm)									62(17)	70		
Multi-Purpose, High-Speed	1236R 1248R / 1248 	Rotor Cat. No.	GRF-G-s0.2-64	GRF-G-m2.0-30	GRA-G-15-24	GRF-G-15-24	GRF-G-50-8	GRF-G-85-6					
		Bucket Cat. No.	-	-	GLB-15-FA	-	-	-					
		Max. Capacity	64 x 0.2 ml	30 x 2.0 ml	24 x 15 ml	24 x 15 ml	8 x 50 ml	6 x 85 ml					
		Shape											
		Max. RPM/RCF	12,000/9,494(max), 10,800(3x)rot	12,000/15,520	4,000/3,134	④ 8,000/8,872	12,000/16,582	10,000/12,298					
		Hole Diameter (mm)	6.5	11.1	18	17.5	29.5	38.5					
	1580 / 1580R 	Rotor Cat. No.	GRF-G-s0.2-64	GRF-G-m2.0-30	GRA-G-15-24	GRF-G-15-24	GRF-G-50-8	GRF-G-85-6	GRF-G-250-6				
		Bucket Cat. No.	-	-	GLB-15-FA	-	-	-	-				
		Max. Capacity	64 x 0.2 ml	30 x 2.0 ml	24 x 15 ml	24 x 15 ml	8 x 50 ml	6 x 85 ml	6 x (250 & 15 ml)				
		Shape											
		Max. RPM/RCF	12,000/9,494(max), 10,800(3x)rot	15,000/24,249	4,000/3,134	④ 8,000/8,872	⑤ 15,000/25,910 12,000/16,582	⑥ 12,000/17,709 10,000/12,298	④ 8,000/ 9,588(250), 9,395(15)				
		Hole Diameter (mm)	6.5	11.1	18	17.5	29.5	38.5	62(17)				
Clinical, Low-Speed	406 / 416 	Rotor Cat. No.	GRA-15-6A	GRA-S-15-16A	GRS-S-15-6	GRS-S-50-4 only for 416							
		Bucket Cat. No.	GLB-15A-FA	GLB-15A-FA	GLB-15-15	GLB-50-50	GLB-c50-50	GLB-15-50	GLB-c15-50	GLB-d15-50	GLB-dc15-50		
		Max. Capacity	6 x 15 ml	16 x 15 ml	6 x 15 ml	4 x 50 ml	4 x 50 ml conical	4 x 15 ml	4 x 15 ml conical	4 x 2 x 15 ml	4 x 2 x 15 ml conical		
		Shape											
		Max. RPM/RCF	4,000/2,075	4,000/2,700	4,000/2,826	4,000/2,826	4,000/2,700	4,000/2,700	4,000/2,700	4,000/2,700	4,000/2,700		
		Hole Diameter (mm)	18	18	17	30.5	29.5	17	17	17	17		
	p59-60 	Rotor Cat. No.											
		Bucket Cat. No.											
		Max. Capacity											
		Shape											
		Max. RPM/RCF											
		Hole Diameter (mm)											
p61-66 	Rotor Cat. No.												
	Bucket Cat. No.												
	Max. Capacity												
	Shape												
	Max. RPM/RCF												
	Hole Diameter (mm)												

GRF-L-1000-4		GRF-L-1000-6		GRS-L-r250-4	
-		-		GLB-r250-r250	GLP-mw-r250
4 x 1,000 ml		6 x 1,000 ml		4 x 250 ml	4 x 4 MTPs
					
8,000/12,071	7,000/10,825	4,000/3,134	4,000/2,737	4,000/3,134	4,000/2,737
98	98	86 x 70.3	88 x 128.5	86 x 70.3	88 x 128.5
175	175	102.5	80	102.5	80







  

GRS-L-r250-4		GRS-L-r750-4		GRS-L-r750-4	
GLB-100(L)-r250	GLB-100(S)-r250	GLB-100(C)-r250	GLB-r250-r250	GLP-mw-r250	GLB-r750-r750
4 x 100 ml	4 x 100 ml	4 x 100 ml	4 x 250 ml	4 x 4 MTPs	4 x 750 ml
					
4,000/4,358	4,000/4,155	4,000/4,191	4,000/3,134	4,000/2,737	3,600/2,898
35.5	44.6	61.5	86 x 70.3	88 x 128.5	99 x 99
207	190	190	102.5	80	135







  

GRS-L-r250-4		GRS-L-r750-4		GRS-L-r750-4	
GLB-r250-r250	GLP-mw-r250	GLB-500-r750	GLP-mw-r750	GLB-750-750	GLB-b750-750
4 x 250 ml	4 x 4 MTPs	4 x 500 ml	4 x 4 MTPs	4 x 750 ml	4 x 750 ml
					
4,000/3,134	4,000/2,737	3,600/3,159	3,600/2,485	4,000/3,667	4,000/3,900
86 x 70.3	88 x 128.5	69.2	88 x 128.5	99	99
102.5	80	165	80	142	130





  





GRS-G-100-6		GRS-G-250-4		GRS-G-r250-4	
GLB-b100-100	GLB-b50-100	GLB-10-8-100	GLB-bd15-100	GLB-bdc15-100	GLB-250-250
6 x 100 ml	6 x 50 ml	6 x 8 x 10 ml vacutainer	6 x 2 x 15 ml	6 x 2 x 15 ml conical	4 x 250 ml
					
4,000/3,105	4,000/3,032	4,000/3,105	4,000/3,032	4,000/3,105	5,000/5,394
47	30.5	16	17	17	62
130	125	120	120	127	153






GRS-G-100-6		GRS-G-250-4		GRS-G-r250-4	
GLB-b100-100	GLB-b50-100	GLB-10-8-100	GLB-bd15-100	GLB-bdc15-100	GLB-250-250
6 x 100 ml	6 x 50 ml	6 x 8 x 10 ml vacutainer	6 x 2 x 15 ml	6 x 2 x 15 ml conical	4 x 250 ml
					
4,000/3,105	4,000/3,032	4,000/3,105	4,000/3,032	4,000/3,105	5,000/5,394
47	30.5	16	17	17	62
130	125	120	120	127	153







  

GRS-S-100-4 only for 416		GRS-S-mw-2	
GLB-b100-100	GLB-b50-100	GLB-10-8-100	GLB-bd15-100
4 x 100 ml	4 x 50 ml	4 x 8 x 10 ml vacutainer	4 x 2 x 15 ml
			
4,000/2,774	4,000/2,700	4,000/2,774	4,000/2,700
47	30.5	16	17
130	130	120	115


-  Fixed Angle Rotors
-  Swing-Out Rotors
-  Adaptors available for smaller tubes
-  Refrigerated models

- The fixed angle rotors are supplied with rotor lid (except PCR strip rotors).
- The open style angle rotors are supplied with tube sleeves.
- The swing-out rotor may be ordered together with compatible buckets and adaptors.
- The colors of the rotors, buckets and adaptors may be different and changeable without notification.

GRS-L-750-6			GRS-L-1400-4W	GRS-L-mw-4W
GLB-750-750	GLB-500-750	GLB-mw-750	GLB-1400-1400	GLP-mw-1400
6 x 750 ml	6 x 500 ml	6 x 6 MTPs	4 x 1,400/4 blood bags	4 x 4 MTPs
				
4,000/3,982	4,000/4,248	4,000/3,384	4,000/3,982	5,000/5,324
99 x 101.5	69.2 x 135	88 x 128.5	134 x 115	88 x 128
142	165	80	150	57

GRS-G-r750-4		GRS-G-750-4			
GLB-500-r750	GLP-mw-r750	GLB-750-750	GLB-b750-750	GLB-500-750	GLP-mw-750
4 x 500 ml	4 x 4 MTPs	4 x 750 ml	4 x 750 ml	4 x 500 ml	4 x 4 MTPs
					
3,600/3,159	3,600/2,485	4,000/3,667		4,000/3,900	4,000/3,068
69.2	88 x 128.5	99	99	69.2	88 x 128.5
165	80	142	130	165	80

## Rotor Availability (Micro Centrifuges)

Micro	 mini p15~16	Rotor Cat. No.	GRA-s0.2-32	GRF-m1.8-10	GRF-m2.0-12
		Max. Capacity	32 x 0.2 ml	10 x 1.8 ml cryotube	12 x 2.0 ml
		Shape			 <span style="color: blue;">A</span>
		Max. RPM/RCF	6,000/1,554(1 row), 1,850(2 row)	13,500/12,300	13,500/12,300
		Hole Diameter (mm)	6.5	12.8	11.1
		Max. Height for Tube fit (mm)	-	50	42
	 1524 p17~18	Rotor Cat. No.	GRF-s0.2-32	GRF-m2.0-18	GRF-m2.0-24
		Max. Capacity	32 x 0.2 ml	18 x 2.0 ml filter tube	24 x 2.0 ml
		Shape		 <span style="color: blue;">A</span>	 <span style="color: blue;">A</span>
		Max. RPM/RCF	15,000/14,187	15,000/18,891	15,000/21,206
		Hole Diameter (mm)	6.5	11.1	11.1
		Max. Height for Tube fit (mm)	16	65	52
	 1536 p19~20	Rotor Cat. No.	GRF-s0.2-32	GRF-m2.0-24A	GRF-m2.0-36
		Max. Capacity	32 x 0.2 ml	24 x 2.0 ml	36 x 2.0 ml
		Shape		 <span style="color: blue;">A</span>	 <span style="color: blue;">A</span>
		Max. RPM/RCF	15,000/14,187	15,000/21,206	15,000/21,206
Hole Diameter (mm)		6.5	11.1	11.1	
Max. Height for Tube fit (mm)		16	56	52	
 1730R p21~22	Rotor Cat. No.	GRF-M-s0.2-64	GRF-M-m2.0-18	GRF-M-m2.0-24	GRF-M-m2.0-30
	Max. Capacity	64 x 0.2 ml	18 x 2.0 ml filter tube	24 x 2.0 ml	30 x 2.0 ml
	Shape	 <span style="color: blue;">A</span>	 <span style="color: blue;">A</span>	 <span style="color: blue;">A</span>	
	Max. RPM/RCF	12,500/10,237(inner), 11,722(outer)	15,000/18,891	17,000/27,237	14,000/21,124
	Hole Diameter (mm)	6.5	11.1	11.1	11.1
	Max. Height for Tube fit (mm)	16	65	52	52

■ Fixed Angle Rotors
















A Adaptors available for smaller tubes

■ Swing-Out Rotors

R Refrigerated models
































## Fixed Angle Rotor Selection Guide by Sample Container

Tube Shape & Volume										
	4 or 8 (PCR strip) / 32 or 64	10	12	24	30	36	18	6 or 16 or 24	12	24 (only 15 ml)
Max. Capacity (ea)	4 or 8 (PCR strip) / 32 or 64	10	12	24	30	36	18	6 or 16 or 24	12	24 (only 15 ml)
Rotor	GRA-s0.2-32 GRF-s0.2-32 GRF-M-s0.2-64 GRF-G-s0.2-64 GRF-L-s0.2-64	GRF-m1.8-10	GRF-m2.0-12	GRF-m2.0-24 GRF-M-m2.0-24	GRF-M-m2.0-30 GRF-G-m2.0-30 GRF-L-m2.0-30	GRF-m2.0-36	GRF-m2.0-18 GRF-M-m2.0-18	GRA-15-6A GRA-S-15-16A GRA-G-15-24	GRF-L-15-12	GRF-G-15-24
Bucket	-	-	-	-	-	-	-	GLB-15A-FA GLB-15-FA	-	-
Shape										
Hole diameter (mm) Max. height for tube fit (mm)	6.5 16	12.8 50	11.1 42	11.1 52	11.1 52	11.1 52	11.1 65	18 125	17 125	17.5 115
Optional Adaptors	-	GAS-m0.22 0.2 ml GAS-m0.52 0.5 ml	GAS-m0.22 0.2 ml GAS-m0.52 0.5 ml				GAS-m0.22 0.2 ml GAS-m0.52 0.5 ml	GAS-3(15) 3 ml GAS-4(15) 4 ml GAS-5(15) 5 ml	-	-
mini (RPM / RCF)	6,000 / 1,850	13,500 / 12,300	13,500 / 12,300	-	-	-	-	-	-	-
1524 (RPM / RCF)	15,000 / 14,187	-	-	15,000 / 21,206	-	-	15,000 / 18,891	-	-	-
1536 (RPM / RCF)	-	-	-	15,000 / 21,206	-	15,000 / 21,206	-	-	-	-
1730R (RPM / RCF)	12,500 / 11,722	-	-	17,000 / 27,237	14,000 / 21,124	-	15,000 / 18,891	-	-	-
406 (RPM / RCF)	-	-	-	-	-	-	-	4,000 / 2,075	-	-
416 (RPM / RCF)	-	-	-	-	-	-	-	4,000 / 2,700	-	-
1248 (RPM / RCF)	-	-	-	-	-	-	-	-	-	-
1248R (RPM / RCF)	-	-	-	-	12,000 / 15,520	-	-	-	-	8,000 / 8,872
1236R (RPM / RCF)	12,000 / 10,803	-	-	-	-	-	-	4,000 / 3,134	-	-
1580 (RPM / RCF)	-	-	-	-	-	-	-	-	-	-
1580R (RPM / RCF)	-	-	-	-	15,000 / 24,249	-	-	-	-	8,000 / 8,872
1736R (RPM / RCF)	12,000 / 10,803	-	-	-	17,000 / 31,147	-	-	-	17,000 / 32,310	-
2236R (RPM / RCF)	-	-	-	-	22,000 / 52,163	-	-	-	20,000 / 44,720	-
1096R (RPM / RCF)	-	-	-	-	-	-	-	-	-	-















## Swing-Out Rotor Selection Guide by Sample Container

\* The PCR tube rack should be necessary for non-skirted PCR plate.

Tube Shape & Volume														
	2 x 2	4 x 4	4 x 4 or 4 x 6	4 x 4	1 x 4	1 x 6	8 x 4 or 8 x 6	1 x 4	2 x 4	1 x 6	2 x 4 or 2 x 6	1 x 4	2 x 4	2 x 4 or 2 x 6
Max. Capacity (ea)	2 x 2	4 x 4	4 x 4 or 4 x 6	4 x 4	1 x 4	1 x 6	8 x 4 or 8 x 6	1 x 4	2 x 4	1 x 6	2 x 4 or 2 x 6	1 x 4	2 x 4	2 x 4 or 2 x 6
Bucket	-	GLP-mw-250	GLP-mw-750	GLP-mw-750	GLP-mw-1400	GLB-15-15	GLB-10-8-100	GLB-15-50	GLB-d15-50	GLB-15-15	GLB-bd15-100	GLB-c15-50	GLB-dc15-50	GLB-bdc15-100
Rotor	GRS-S-mw-2	GRS-G-r250-4 GRS-L-r250-4	GRS-G-750-4 GRS-L-750-4 GRS-L-750-6	GRS-G-750-4 GRS-L-750-4	GRS-L-mw-4W	GRS-S-15-6	GRS-S-100-4 GRS-G-100-6	GRS-S-50-4	GRS-S-50-4	GRS-S-15-6	GRS-S-100-4 GRS-G-100-6	GRS-S-50-4	GRS-S-50-4	GRS-S-100-4 GRS-G-100-6
Shape														
Max. height for tube fit (mm)	-	-	-	-	-	125	120	125	120	125	123/127 (w/cap)	120	120	123/127 (w/cap)
Optional Tube Rack & Adaptor	-	-	-	-	-	-	-	-	-	-	-	-	-	-
416 (RPM / RCF)	4,000 / 1,986	-	-	-	-	4,000 / 2,826	4,000 / 2,774 (S model)	4,000 / 2,700	4,000 / 2,700	4,000 / 2,826	4,000 / 2,700 (S model)	4,000 / 2,700	4,000 / 2,700	4,000 / 2,774 (S model)
1248 (RPM / RCF)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1248R (RPM / RCF)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1236R (RPM / RCF)	-	4,000 / 2,737 (G model)	-	-	-	-	4,000 / 3,161 (G model)	-	-	-	4,000 / 3,032 (G model)	-	-	4,000 / 3,105 (G model)
1580 (RPM / RCF)	-	-	4,000 / 3,068 (G model)	3,600 / 2,485 (G model)	-	-	-	-	-	-	-	-	-	-
1580R (RPM / RCF)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1736R (RPM / RCF)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2236R (RPM / RCF)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1096R (RPM / RCF)	-	4,000 / 2,737 (L model)	4,000 / 3,068 (L model)	3,600 / 2,485 (L model)	5,000 / 5,324	-	-	-	-	-	-	-	-	-

15 ml conical tube		50 ml		50 ml conical tube	85 ml	250 ml tube	500 ml	1,000 ml	
6 or 16 or 24	12	6	8	6	6	6	6	4	6
GRA-15-6A ● GRA-S-15-16A ● GRA-G-15-24 ●	GRF-L-c15-12	GRF-L-50-6	GRF-G-50-8 ● GRF-L-50-8 ●	GRF-L-c50-6	GRF-G-85-6 ● GRF-L-85-6 ●	GRF-G-250-6 ● GRF-L-250-6 ●	GRF-L-500-6	GRF-L-1000-4	GRF-L-1000-6
GLB-15A-FA GLB-15-FA	-	-	-	-	-	-	-	-	-
									
18 125	17 125	29.5 120	29.5 120	29.5 125	38.5 125	62 (250 ml)/17 (15 ml) 130 (250 ml)/120 (15 ml)	70 170	98 175	98 175
GAS-3(15) 3 ml GAS-4(15) 4 ml GAS-5(15) 5 ml	-	GAS-15(50) 15 ml GAS-c15(50) 15 ml conical		-	GAS-15(85) 15 ml GAS-c15(85) 15 ml conical GAS-50(85) 50 ml GAS-c50(85) 50 ml conical	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
4,000 / 2,075 ●	-	-	-	-	-	-	-	-	-
4,000 / 2,700 ●	-	-	-	-	-	-	-	-	-
4,000 / 3,134 ●	-	-	12,000 / 16,582 ●	-	10,000 / 12,298 ●	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	15,000 / 25,910	17,000 / 32,310	15,000 / 25,910 ●	15,000 / 24,753	15,000 / 25,029 ●	10,000 / 14,981 ●	8,000 / 11,305	-	-
-	20,000 / 46,062	22,000 / 54,111	20,000 / 46,062 ●	17,000 / 31,793	20,000 / 44,496 ●	13,000 / 25,318 ●	10,000 / 17,664	8,000 / 12,071	7,000 / 10,825
-	-	-	-	-	-	10,000 / 14,981 ●	8,000 / 11,305	-	-

- **A** : Adaptor available for smaller tubes
- (C) : conical tube
- The fixed angle rotors are supplied with rotor lid (except PCR strip rotors).
- The open style angle rotors are supplied with tube sleeves.
- The swing-out rotor may be ordered together with compatible buckets and adaptors.
- The colors of the rotors, buckets and adaptors may be different and changeable without notification.

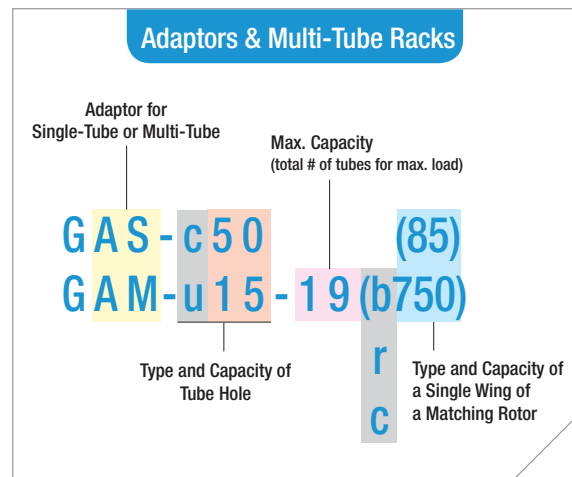
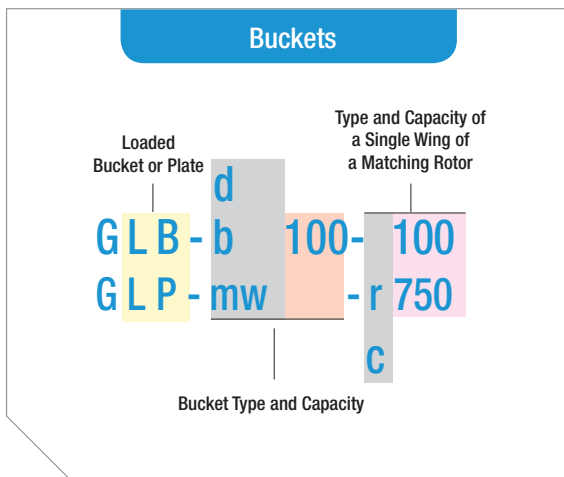
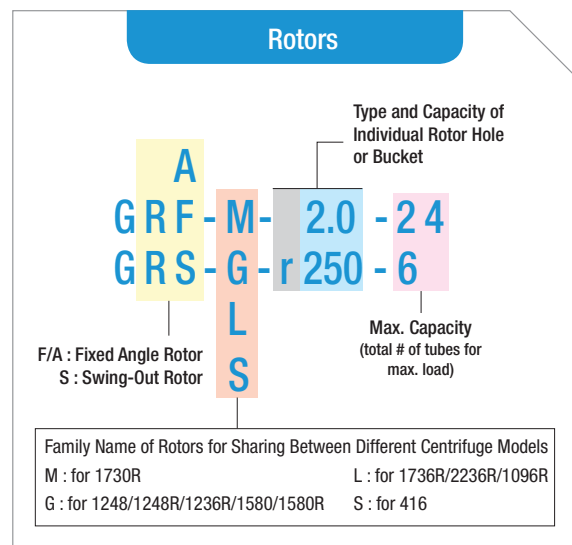
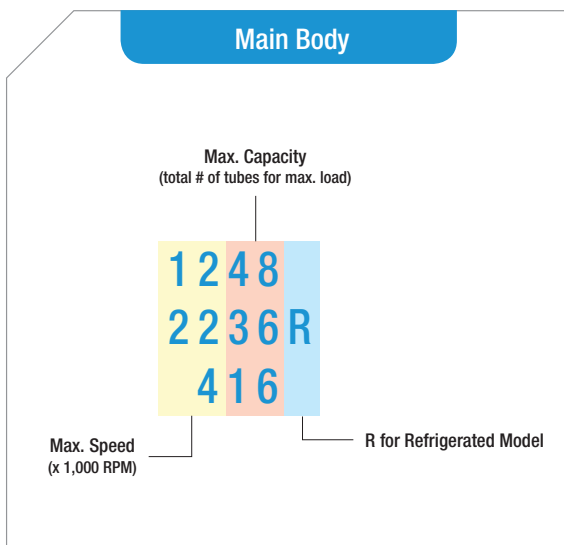
10, 20 ml syringe tube	60 ml syringe tube	50 ml		50 ml conical tube	100 ml	100 ml glass tube	250 ml	250 ml conical	400 ml blood bag	500 ml	750 ml				
2 x 4	1 x 4	1 x 4	1 x 4 or 1 x 6	1 x 4	1 x 4 or 1 x 6	1 x 4	1 x 4	1 x 4	2 x 4	1 x 4 or 1 x 6	1 x 4	1 x 4	1 x 6		
GLB-d20/10-250	GLB-60-250	GLB-50-50	GLB-b50-100	GLB-c50-50	GLB-b100-100 (with GAS-100b100)	GLB-100(L)-250 GLB-100(S)-250 GLB-100(C)-250	GLB-250-250 ● GLB-250-250 ● (with GAS-250/250)	GLB-750-750 ● GLB-750-750 ● (with GAS-250/750)	GLB-c250-250	GLB-1400-1400 (with GAM-400-2(1400))	GLB-500-750	GLB-500-750	GLB-750-750		
GRS-G-250-4	GRS-S-50-4	GRS-S-100-4 GRS-G-100-6	GRS-S-50-4	GRS-S-100-4 GRS-G-100-6	GRS-G-r250-4	GRS-G-250-4 ● GRS-L-250-4 ● GRS-L-250-4 ●	GRS-G-750-4 ●●● GRS-L-750-4 ●●● GRS-L-750-6 ●●	GRS-G-r750-4 GRS-L-r750-4	GRS-G-250-4	GRS-L-1400-4W	GRS-G-750-4 GRS-L-750-4 GRS-L-750-6	GRS-G-r750-4 GRS-L-r750-4	GRS-G-750-4 GRS-L-750-4		
															
132/125	165	125	115/125 (web cap)	125	120/130 (web cap)	207 (L) 190 (S, C)	153 ● / 130 ●	142 ● / 130 ●	135	153	150	165	142		
-	-	GAS-c15(50) 15 ml GAS-c50(50) 50 ml conical	-	GAM-m2.0-6(100) 2.0 ml GAM-7-50(100) 7 ml GAM-10-50(100) 10 ml GAM-15-3(100) 15 ml (G) GAM-c15-3(100) 15 ml (G) GAS-c15(6100) 15 ml (G) GAS-c50(6100) 50 ml (G) GAS-c50(6100) 50 ml (G) GAS-85(6100) 85 ml GAS-100(6100) 100 ml	-	for (250) bucket GAM-5-12(250) 5 ml GAM-15-12(250) 15 ml GAM-c15-9(250) 15 ml (G) GAM-c15-9(250) 15 ml (G) GAM-50-4(250) 50 ml (G) GAM-50-3(250) 50 ml (G) GAM-85-2(250) 85 ml GAS-250(250) 250 ml	GAM-5-24(750) 5 ml GAM-10-21(750) 10 ml GAM-c15-16(750) 15 ml (G) GAM-c15-16(750) 15 ml (G) GAM-50-9(750) 50 ml GAM-50-7(750) 50 ml (G) GAM-c50-9(750) 50 ml (G) GAS-250(750) 250 ml	GAM-5-30(750) 5 ml GAM-15-20(750) 15 ml GAM-c15-16(750) 15 ml (G) GAM-50-9(750) 50 ml GAM-15-24(1400) 15 ml GAM-50-12(1400) 50 ml GAM-c50-9(1400) 50 ml (G)	-	-	-	-	-		
-	-	4,000 / 2,700	4,000 / 2,700 (S model)	4,000 / 2,700	4,000 / 2,774 (S model)	-	-	-	-	-	-	-	-		
5,000 / 4,752	5,000 / 5,394	-	4,000 / 3,032 (G model)	-	4,000 / 3,105 (G model)	-	5,000 / 5,394 (GRS-G-250-4)	-	-	-	-	-	-		
-	-	-	-	-	-	-	4,000 / 3,134 (GRS-G-r250-4)	4,000 / 3,667 (G model)	3,600 / 2,898 (G model)	5,000 / 5,394	-	4,000 / 3,900 (G model)	3,600 / 3,159 (G model)		
-	-	-	-	-	-	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	4,000 / 4,358 (L) 4,000 / 4,155 (S) 4,000 / 4,191 (C)	4,000 / 3,134 (L model)	4,000 / 3,667 (L model)	3,600 / 2,898 (L model)	-	4,000 / 3,982	4,000 / 3,900 (L model)	3,600 / 3,159 (L model)	4,000 / 3,667 (L model)	4,000 / 3,982

## Catalog Numbering Rule of Centrifuges and Accessories

 Type of Tube or Bucket

No symbol : round type  
 r : rectangular type  
 c : conical type  
 d : dual hole type

b : for bioseal application  
 u : universal for both  
     round & conical tube  
 mw : for multiwell plate



## | Function Icons



### Fast Cooling

Cooling down to 4°C within 5 minutes



### ACC/DEC Rate Control

Setting run-up (9 steps) / down (10 steps) rates



### Rotor ID

Automatic rotor identification for safe operation



### Up to 100 or 10 Program Memory

for convenient operation of the routine protocols



### Short Spin (Pulse)

One-touch key for quick spin



### Imbalance Cut-Off

and accompanied warning keep the instrument protected from unsuitable operation.



### Selectable Time Mode of "At Set Speed"

for counting running time only when reached the set speed



### Soft Start/Stop Function of 416

to achieve gentle run-up and down



### Motorized Lid Mechanics

Only a gentle touch is sufficient to close and open the lid.



### Adjustable End Alarm

alerts completion of the operation.



### A Large Assortment of Rotors, Buckets and Adaptors

support diverse applications doable with one instrument.



### Glove-Friendly, Soft Touch Buttons

allows easy setting of running conditions.



### Lid Drop Protection Design

allows operator's convenience and safety.



### User ID and Password Function

ideal for core laboratory or multi-user environments



### Automatic Lid Release

at the completion of the operation



### Automatic RPM/RCF Conversion

for easy detection of g-value forced to samples

## Mini

## Personal Micro Centrifuge

# mini

## Personal Micro Centrifuge



- | 12 microtubes or 10 cryotubes can be run up to 13,500 rpm (12,300 xg).
- | Compact design built to accommodate PCR tubes, microtubes and cryotubes (0.2 to 2.0 ml)
- | Patented air-cooling to minimize noise and heat generation
- | A separate "PULSE" key for quick spin
- | Very quiet operation at less than 56 dB allows for comfortable laboratory environment.
- | Supplied with autoclavable 12-place fixed angle micro-rotor, snap-fit plastic rotor lid and 12 adaptors for 0.2 ml PCR tubes



## Applications

Molecular works of cell collection, phenol extraction, simple spin-down, etc.

## Technical Specifications

Max. RPM/RCF	13,500 / 12,300 xg	Safety lid lock	Yes
Max. capacity	12 x 1.5/2.0 ml, 4 x 8-tube PCR strips	Automatic lid release at completion	Yes
Time control	Pulse or timed ≤ 30 min	Power supply (V/Hz)	220/50~60 (110V optional)
RPM/RCF conversion	Yes	Power requirement (VA)	110
Noise level (dB)	≤ 56	Dimension (W x D x H, mm)	208 x 245 x 145
ACC / DEC (sec)	≤ 12 / ≤ 16	Weight without rotor (kg)	4.4
Parameters on display window	RPM (RCF), Oper Status, Lid Open/Close, Min(sec)	CE mark	Yes
Display	Blue LCD	Cat. No.	GZ-1312



**Fixed Angle Rotor, GRF-m2.0-12**

12 x 1.5/2.0 ml  
 ∟ 45°  
 Hole diameter (mm) : 11.1  
 Max. height for tube fit (mm) : 42

Tube			
Tube capacity (ml)	0.2	0.5	1.5/2.0
Adaptor			None
Cat. No.	<b>GAS-m0.2(2)</b>	<b>GAS-m0.5(2)</b>	-
Adaptor bore (Φx L, mm)	6.5 x 23	8 x 31	-
Radius (mm)	43.5	50.5	60.4
Max. RPM	13,500		
Max. RCF (g-force)	8,863	10,290	12,300



**Fixed Angle Rotor, GRF-m1.8-10**

10 x 1.8 ml Cryotube  
 ∟ 45°  
 Hole diameter (mm) : 12.8  
 Max. height for tube fit (mm) : 50

Tube			
Tube capacity (ml)	0.2	0.5	1.8 ml Cryotube
Adaptor			None
Cat. No.	<b>GAS-m0.2(2)</b>	<b>GAS-m0.5(2)</b>	-
Adaptor bore (Φx L, mm)	6.5 x 23	8 x 31	-
Radius (mm)	43.5	50.5	60.4
Max. RPM	13,500		
Max. RCF (g-force)	8,863	10,290	12,300



**PCR Rotor, GRA-s0.2-32**

4 x 8-tube PCR strips, 32 x 0.2 ml  
 ∟ 45°  
 Hole diameter (mm) : 6.5

Tube		
Tube capacity (ml)	0.2	8-tube PCR strip
Radius (mm)	1st : 38.6 / 2nd : 46	
Max. RPM	6,000	
Max. RCF (g-force)	1st : 1,554 / 2nd : 1,850	

1524

High-Speed Micro Centrifuge

1524

High-Speed Micro Centrifuge



- | Compact design built to accommodate PCR tubes, microtubes and cryotubes (0.2 to 2.0 ml)
- | A separate "PULSE" key for quick spin
- | Selectable time mode of "at set SPEED" for counting running time only when reached the set speed
- | Parameters can be changed during operation.
- | Key lock function helps the set parameters secured during operation.
  
- | Autoclavable and corrosion-free rotors ensure safety and long life.



- | **Applications** Molecular works of cell collection, phenol extraction, simple spin-down, filter tube separation, etc.

### Technical Specifications

Max. RPM/RCF	15,000 / 21,206 xg	Imbalance cut-off	Yes
Max. capacity	24 x 1.5/2.0 ml, 4 x 8-tube PCR strips	Safety lid lock	Yes
Time control	Pulse, timed < 100 min or continuous	Lid drop protection	Yes
Time counting modes	Selectable, at set speed or from starting	Automatic lid release at completion	Yes
RPM/RCF conversion	Yes	Power supply (V/Hz)	220/50~60 (110V optional)
Noise level (dB)	≤ 60	Power requirement (VA)	440
ACC/DEC (step or time)	9/10 steps (15/15 sec)	Dimension (W x D x H, mm)	249 x 368 x 240
Program memory	100	Weight without rotor (kg)	18
Parameters on display window	RPM (RCF), Oper Status, Lid Open/Close, Min:Sec, ACC, DEC	CE mark	Yes
Display	Blue LCD	Cat. No.	GZ-1524





**Fixed Angle Rotor, GRF-m2.0-24**

24 x 1.5/2.0 ml  
 ∟ 45°  
 Hole diameter (mm) : 11.1  
 Max. height for tube fit (mm) : 52

Tube			
Tube capacity (ml)	0.2	0.5	1.5/2.0
Adaptor			None
Cat. No.	<b>GAS-m0.2(2)</b>	<b>GAS-m0.5(2)</b>	-
Adaptor bore (Φ x L, mm)	6.5 x 23	8 x 31	-
Radius (mm)	67	73	84.3
Max. RPM	15,000		
Max. RCF (g-force)	16,854	18,363	21,206



**Fixed Angle Rotor, GRF-m2.0-18**

18 x 1.5/2.0 ml Filter tube  
 ∟ 45°  
 Hole diameter (mm) : 11.1  
 Max. height for tube fit (mm) : 65

Tube				
Tube capacity (ml)	0.2	0.5	1.5/2.0	2.0 ml filter tube
Adaptor			None	None
Cat. No.	<b>GAS-m0.2(2)</b>	<b>GAS-m0.5(2)</b>	-	-
Adaptor bore (Φ x L, mm)	6.5 x 23	8 x 31	-	-
Radius (mm)	57.8	63.8	75.1	64.2
Max. RPM	15,000			
Max. RCF (g-force)	14,540	16,049	18,891	16,150



**PCR Rotor, GRF-s0.2-32**

4 x 8-tube PCR strips, 32 x 0.2 ml  
 ∟ 45°  
 Hole diameter (mm) : 6.5  
 Max. height for tube fit (mm) : 16

Tube		
Tube capacity (ml)	0.2	8-tube PCR strip
Radius (mm)	56.4	
Max. RPM	15,000	
Max. RCF (g-force)	14,187	

1536

High-Speed Micro Centrifuge

1536

## High-Speed Micro Centrifuge



- Compact design built to accommodate PCR tubes, microtubes and cryotubes (0.2 to 2.0 ml)
- Soft touch control panel and trendy touch wheel is highly sensitive and intuitive to input parameters.
- 3.5" LCD window with simultaneous display of all operational parameters of set and actual figures
- Selectable time mode of "at set SPEED" for counting running time only when reached the set speed
- A separate "PULSE" key for quick spin
- Parameters can be changed during operation.
- Key lock function helps the set-parameters secured during operation.
- Lid drop protection design allows easiness and safety when loading or unloading sample.
- With motorized lid mechanics, only a gentle touch is sufficient to close and open the lid.



- Applications** Molecular works of cell collection, phenol extraction, simple spin-down, filter tube separation, etc.

## Technical Specifications

Max. RPM/RCF	15,000 / 21,206 xg	Imbalance cut-off	Yes
Max. capacity	36 x 1.5/2.0 ml, 4 x 8-tube PCR strips	Safety lid lock	Yes
Time control	Pulse, timed < 99min or continuous	Lid drop protection	Yes
Time counting modes	Selectable, at set speed or from starting	Motorized lid open & close	Yes
RPM/RCF conversion	Yes	Automatic lid release at completion	Yes
Noise level (dB)	≤ 60	Power supply (V/Hz)	220/50~60 (110V optional)
ACC/DEC (step or time)	9 / 10 steps (15 / 15 sec)	Power requirement (VA)	400
Program memory	100	Dimension (W x D x H, mm)	240 x 378 x 240
Parameters on display window	Simultaneous display of all parameters of set and actual figures	Weight without rotor (kg)	11.9
Display	3.5" LCD	CE mark	-
		Cat. No.	GZ-1536



**Fixed Angle Rotor, GRF-m2.0-36**

36 x 1.5/2.0 ml (12 x 0.2 ml and 12 x 2.0 ml filter tube)  
 ∟ 45°  
 Hole diameter (mm) : 11.1  
 Max. height for tube fit (mm) : 52  
 Supplied with aerosol tight O-ring

Tube					
Tube capacity (ml)	0.2	0.5	0.2	1.5/2.0	2.0 ml filter tube
Adaptor			None	None	None
Cat. No.	<b>GAS-m0.2(2)</b>	<b>GAS-m0.5(2)</b>	-	-	-
Adaptor bore (Φ x L, mm)	6.5 x 23	8 x 31	-	-	-
Radius (mm) (inner/outer)	53.5/69	60.5/73	58.2	70.9/84.3	59.1
Max. RPM	15,000				
Max. RCF (g-force) (inner/outer)	13,458/16,854	15,219/18,363	14,640	17,835/21,206	14,867



**Fixed Angle Rotor, GRF-m2.0-24A**

24 x 1.5/2.0 ml  
 ∟ 45°  
 Hole diameter (mm) : 11.1  
 Max. height for tube fit (mm) : 56  
 Supplied with aerosol tight O-ring

Tube			
Tube capacity (ml)	0.2	0.5	1.5/2.0
Adaptor			None
Cat. No.	<b>GAS-m0.2(2)</b>	<b>GAS-m0.5(2)</b>	-
Adaptor bore (Φ x L, mm)	6.5 x 23	8 x 31	-
Radius (mm)	67	73	84.3
Max. RPM	15,000		
Max. RCF (g-force)	16,854	18,363	21,206



**PCR Rotor, GRF-s0.2-32**

4 x 8-tube PCR strips, 32 x 0.2 ml  
 ∟ 45°  
 Hole diameter (mm) : 6.5  
 Max. height for tube fit (mm) : 16

Tube		
Tube capacity (ml)	0.2	8-tube PCR strip
Radius (mm)	56.4	
Max. RPM	15,000	
Max. RCF (g-force)	14,187	

# 1730R

## High-Speed Micro Centrifuge

# 1730R

## Refrigerated, High-Speed Micro Centrifuge



- | The refrigerated microcentrifuge, 1730R is a "must-have" item for molecular and cellular lab works with max speed of 17,000 rpm (27,237 xg).
- | Maximum capacity for 30 microtubes or 18 microfilter tubes or 64 PCR tubes
- | Fast cooling function to 4°C in 5 minutes for fast start up of cooled samples
- | The compressor-off function when lid is open minimizes unnecessary cooling and frosting.
- | Teflon coated rust-free chamber
- | Very quiet operation at less than 56 dB allows for comfortable laboratory environment.
- | Selectable time mode of "at set SPEED" for counting running time only when reached the set speed
- | A separate "PULSE" key for quick spin
- | Parameters can be changed during operation.
- | Key lock function helps the set parameters secured during operation.



- | **Applications** Molecular works of ethanol precipitation, phenol extraction, NA preparation, cell collection, spin-down of temperature sensitive reaction mixtures, etc.

### Technical Specifications

Max. RPM/RCF	17,000 / 27,237 xg	Display	Blue LCD
Max. capacity	30 x 1.5/2.0 ml, 8 x 8-tube PCR strips	Automatic rotor identification	Yes
Temp. range (°C)	-20 to +40	Imbalance cut-off	Yes
FAST cool button	Yes	Safety lid lock	Yes
Time control	Pulse, timed < 100 min or continuous	Lid drop protection	Yes
Time counting modes	Selectable, at set speed or from starting	Power supply (V/Hz)	220/50-60 (110V optional)
RPM/RCF conversion	Yes	Power requirement (kVA)	2.0
Noise level (dB)	≤ 56	Dimension (W x D x H, mm)	310 x 620 x 265
ACC/DEC (step or time)	9/10 steps (17/17 sec)	Weight without rotor (kg)	43
Program memory	100	CE mark	Yes
Parameters on display window	RPM (RCF), Oper Status, Lid Open/Close, Min:Sec, Temp, ACC, DEC	Cat. No.	GZ-1730R



**Fixed Angle Rotor, GRF-M-m2.0-24**

24 x 1.5/2.0 ml  
 ∟ 45°  
 Hole diameter (mm) : 11.1  
 Max. height for tube fit (mm) : 52  
 Supplied with aerosol tight O-ring

Tube			
Tube capacity (ml)	0.2	0.5	1.5/2.0
Adaptor			None
Cat. No.	<b>GAS-m0.2(2)</b>	<b>GAS-m0.5(2)</b>	-
Adaptor bore (Φ x L, mm)	6.5 x 23	8 x 31	-
Radius (mm) (24/30)	67/79	73/86	84.3/96.4
Max. RPM (24/30)	17,000/14,000		
Max. RCF (g-force) (24/30)	21,648/17,311	23,910/18,845	27,237/21,124

**Fixed Angle Rotor, GRF-M-m2.0-30**

30 x 1.5/2.0 ml  
 ∟ 45°  
 Hole diameter (mm) : 11.1  
 Max. height for tube fit (mm) : 52  
 Supplied with aerosol tight O-ring



**Fixed Angle Rotor, GRF-M-m2.0-18**

18 x 1.5/2.0 ml filter tube  
 ∟ 45°  
 Hole diameter (mm) : 11.1  
 Max. height for tube fit (mm) : 65  
 Supplied with aerosol tight O-ring

Tube				
Tube capacity (ml)	0.2	0.5	1.5/2.0	2.0 ml filter tube
Adaptor			None	None
Cat. No.	<b>GAS-m0.2(2)</b>	<b>GAS-m0.5(2)</b>	-	-
Adaptor bore (Φ x L, mm)	6.5 x 23	8 x 31	-	-
Radius (mm)	57.8	63.8	75.1	64.2
Max. RPM	15,000			
Max. RCF (g-force)	14,540	16,049	18,891	16,150



**PCR Rotor, GRF-M-s0.2-64**

8 x 8-tube PCR strips, 64 x 0.2 ml  
 ∟ 45°  
 Hole diameter (mm) : 6.5  
 Max. height for tube fit (mm) : 16

Tube		
Tube capacity (ml)	0.2	8-tube PCR strip
Radius (mm)	58.6 (inner) / 67.1 (outer)	
Max. RPM	12,500	
Max. RCF (g-force)	10,237 (inner) / 11,722 (outer)	

1248/R, 1236R, 1580/R

Multi-Purpose, High-Speed Centrifuges

# 1248 · 1248R · 1236R 1580 · 1580R

Multi-Purpose, High-Speed Centrifuges



- | The multi-purpose large capacity centrifuges designed for large-volume daily-working laboratories
- | Max. speed of 12,000 rpm or 15,000 rpm with high capacity and a large assortment of rotor
  
- | Fast cooling function to 4°C in 5 minutes for fast startup of cooled samples (only for "R" models)
- | The compressor-off function when lid is open minimizes unnecessary cooling and frosting (only for "R" models).
  
- | Intuitive control interface with numeric input buttons allows easy setting and editing of running conditions.
- | Selectable time mode of "at set SPEED" for counting running time only when reached the set speed
- | A separate "PULSE" key for quick spin
- | Parameters can be changed during operation.
- | Key lock function helps the set parameters secured during operation.
  
- | With motorized lid mechanics, only a gentle touch is sufficient to close and open the lid.
- | Lid drop protection design allows easiness and safety when loading or unloading samples.
- | The short working height of 84 cm (33 inches) ensures easy loading and unloading (only for 1236R).
- | A large assortment of rotors, buckets and adaptors support diverse application doable with one instrument.

## | Applications

Ideal for cellular and molecular biology work, clinical preparations, industrial applications, etc.



# 1248/R, 1236R, 1580/R

## Multi-Purpose, High-Speed Centrifuges

### Technical Specifications

		1248	1248R	1236R	1580	1580R
Max. RPM/RCF	Fixed angle	12,000 / 15,520 xg	12,000 / 16,582 xg	12,000 / 16,582 xg	15,000 / 24,249 xg	15,000 / 25,910 xg
	Swing-out	5,000 / 5,394 xg				
Max. capacity	Fixed angle	6 x 85 ml, 30 x 1.5/2.0 ml				6 x (250 & 15) ml, 30 x 1.5/2.0 ml
	Swing-out	4 x 250 ml, 48 x 15 ml, 16 MTPs			4 x 750 ml, 80 x 15 ml, 16 MTPs	
Temp. range (°C)		-	-20 to +40	-20 to +40	-	-20 to +40
FAST cool button		-	Yes	Yes	-	Yes
Time control		Pulse, timed < 100 min or continuous	Pulse, timed < 10 hr or continuous	Pulse, timed < 10 hr or continuous	Pulse, timed < 100 min or continuous	Pulse, timed < 10 hr or continuous
Time counting modes		Selectable, at set speed or from starting				
RPM/RCF conversion		Yes				
Noise level (dB)		≤ 60				
ACC/DEC		9/10 steps				
Program memory		100				
Parameters on display window		RPM (RCF), Oper Status, Lid Open/Close, Min:Sec, ACC, DEC	RPM (RCF), Oper Status, Lid Open/Close, Hr:Min, Temp, ACC, DEC		RPM (RCF), Oper Status, Lid Open/Close, Min:Sec, ACC, DEC	RPM (RCF), Oper Status, Lid Open/Close, Hr:Min, Temp, ACC, DEC
Display		Blue LCD				
Automatic rotor identification		Yes				
Imbalance cut-off		Yes				
Safety lid lock		Yes				
Lid drop protection		Yes				
Motorized lid open & close		Yes				
Automatic lid release at completion		Yes	-		Yes	-
Power supply (V/Hz)		220/50~60 (110V optional)				
Power requirement		900 VA	2.5 kVA	2.5 kVA	1.5 kVA	2.5 kVA
Dimension (W x D x H, mm)		475 x 561 x 330	655 x 610 x 355	473 x 610 x 830	540 x 650 x 380	770 x 650 x 390
Weight without rotor (kg)		40	78	110	57	93
CE mark		Yes	-	Yes	Yes	Yes
Cat. No.		GZ-1248	GZ-1248R	GZ-1236R	GZ-1580	GZ-1580R

| Rotors Overview

<p><b>GRS-G-750-4</b></p> <table border="0"> <tr> <td> <p><b>GLB-750-750</b></p>  <p>4 x 250 ml 4,000/3,667 xg</p> </td> <td> <p><b>GLB-b750-750</b></p>  <p>4 x 250 ml 4,000/3,667 xg</p> </td> <td> <p><b>GLB-500-750</b></p>  <p>4 x 500 ml 4,000/3,900 xg</p> </td> <td> <p><b>GLP-mw-750</b></p>  <p>4 x 4 MTP 4,000/3,068 xg</p> </td> </tr> </table> <p>only for 1580/1580R</p>				<p><b>GLB-750-750</b></p>  <p>4 x 250 ml 4,000/3,667 xg</p>	<p><b>GLB-b750-750</b></p>  <p>4 x 250 ml 4,000/3,667 xg</p>	<p><b>GLB-500-750</b></p>  <p>4 x 500 ml 4,000/3,900 xg</p>	<p><b>GLP-mw-750</b></p>  <p>4 x 4 MTP 4,000/3,068 xg</p>	<p><b>GRS-G-r750-4</b></p> <table border="0"> <tr> <td> <p><b>GLB-r750-r750</b></p>  <p>4 x 250 ml 3,600/2,898 xg</p> </td> <td> <p><b>GLB-500-r750</b></p>  <p>4 x 500 ml 3,600/3,159 xg</p> </td> <td> <p><b>GLP-mw-r750</b></p>  <p>4 x 4 MTP 3,600/2,485 xg</p> </td> </tr> </table> <p>only for 1580/1580R</p>			<p><b>GLB-r750-r750</b></p>  <p>4 x 250 ml 3,600/2,898 xg</p>	<p><b>GLB-500-r750</b></p>  <p>4 x 500 ml 3,600/3,159 xg</p>	<p><b>GLP-mw-r750</b></p>  <p>4 x 4 MTP 3,600/2,485 xg</p>
<p><b>GLB-750-750</b></p>  <p>4 x 250 ml 4,000/3,667 xg</p>	<p><b>GLB-b750-750</b></p>  <p>4 x 250 ml 4,000/3,667 xg</p>	<p><b>GLB-500-750</b></p>  <p>4 x 500 ml 4,000/3,900 xg</p>	<p><b>GLP-mw-750</b></p>  <p>4 x 4 MTP 4,000/3,068 xg</p>										
<p><b>GLB-r750-r750</b></p>  <p>4 x 250 ml 3,600/2,898 xg</p>	<p><b>GLB-500-r750</b></p>  <p>4 x 500 ml 3,600/3,159 xg</p>	<p><b>GLP-mw-r750</b></p>  <p>4 x 4 MTP 3,600/2,485 xg</p>											
<p><b>GRS-G-250-4</b></p> <table border="0"> <tr> <td> <p><b>GLB-250-250</b></p>  <p>4 x 250 ml 5,000/5,394 xg</p> </td> <td> <p><b>GLB-c250-250</b></p>  <p>4 x 250 ml 5,000/5,394 xg</p> </td> <td> <p><b>GLB-60-250</b></p>  <p>4 x 60 ml 5,000/5,394 xg</p> </td> <td> <p><b>GLB-d20/10-250</b></p>  <p>4 x 2 x (20 &amp; 10 ml) 5,000/4,752 xg (20) 5,000/4,472 xg (10)</p> </td> </tr> </table>				<p><b>GLB-250-250</b></p>  <p>4 x 250 ml 5,000/5,394 xg</p>	<p><b>GLB-c250-250</b></p>  <p>4 x 250 ml 5,000/5,394 xg</p>	<p><b>GLB-60-250</b></p>  <p>4 x 60 ml 5,000/5,394 xg</p>	<p><b>GLB-d20/10-250</b></p>  <p>4 x 2 x (20 &amp; 10 ml) 5,000/4,752 xg (20) 5,000/4,472 xg (10)</p>	<p><b>GRS-G-r250-4</b></p> <table border="0"> <tr> <td> <p><b>GLB-r250-r250</b></p>  <p>4 x 250 ml 4,000/3,134 xg</p> </td> <td> <p><b>GLP-mw-r250</b></p>  <p>4 x 4 MTPs 4,000/2,737 xg</p> </td> </tr> </table>		<p><b>GLB-r250-r250</b></p>  <p>4 x 250 ml 4,000/3,134 xg</p>	<p><b>GLP-mw-r250</b></p>  <p>4 x 4 MTPs 4,000/2,737 xg</p>		
<p><b>GLB-250-250</b></p>  <p>4 x 250 ml 5,000/5,394 xg</p>	<p><b>GLB-c250-250</b></p>  <p>4 x 250 ml 5,000/5,394 xg</p>	<p><b>GLB-60-250</b></p>  <p>4 x 60 ml 5,000/5,394 xg</p>	<p><b>GLB-d20/10-250</b></p>  <p>4 x 2 x (20 &amp; 10 ml) 5,000/4,752 xg (20) 5,000/4,472 xg (10)</p>										
<p><b>GLB-r250-r250</b></p>  <p>4 x 250 ml 4,000/3,134 xg</p>	<p><b>GLP-mw-r250</b></p>  <p>4 x 4 MTPs 4,000/2,737 xg</p>												
<p><b>GRS-G-100-6</b></p> <table border="0"> <tr> <td> <p><b>GLB-b100-100</b></p>  <p>6 x 100 ml 4,000/3,105 xg</p> </td> <td> <p><b>GLB-10-8-100</b></p>  <p>6 x 8 x 10 ml 4,000/3,105 xg</p> </td> <td> <p><b>GLB-bd15-100</b></p>  <p>6 x 2 x 15 ml 4,000/3,032 xg</p> </td> <td> <p><b>GLB-bdc15-100</b></p>  <p>6 x 2 x 15 ml (C) 4,000/3,105 xg</p> </td> <td> <p><b>GLB-b50-100</b></p>  <p>6 x 50 ml 4,000/3,032 xg</p> </td> </tr> </table>					<p><b>GLB-b100-100</b></p>  <p>6 x 100 ml 4,000/3,105 xg</p>	<p><b>GLB-10-8-100</b></p>  <p>6 x 8 x 10 ml 4,000/3,105 xg</p>	<p><b>GLB-bd15-100</b></p>  <p>6 x 2 x 15 ml 4,000/3,032 xg</p>	<p><b>GLB-bdc15-100</b></p>  <p>6 x 2 x 15 ml (C) 4,000/3,105 xg</p>	<p><b>GLB-b50-100</b></p>  <p>6 x 50 ml 4,000/3,032 xg</p>	<p><b>GRF-G-250-6</b></p>  <p>6 x (250 &amp; 15 ml) 8,000/9,588 xg (15 ml: 9,395 xg) only for 1580R</p>	<p><b>GRF-G-85-6</b></p>  <p>6 x 85 ml 12,000/17,709 xg (1580R) 10,000/12,298 xg (1248R, 1248, 1236R, 1580)</p>		
<p><b>GLB-b100-100</b></p>  <p>6 x 100 ml 4,000/3,105 xg</p>	<p><b>GLB-10-8-100</b></p>  <p>6 x 8 x 10 ml 4,000/3,105 xg</p>	<p><b>GLB-bd15-100</b></p>  <p>6 x 2 x 15 ml 4,000/3,032 xg</p>	<p><b>GLB-bdc15-100</b></p>  <p>6 x 2 x 15 ml (C) 4,000/3,105 xg</p>	<p><b>GLB-b50-100</b></p>  <p>6 x 50 ml 4,000/3,032 xg</p>									
<p><b>GRF-G-50-8</b></p>  <p>8 x 50 ml 15,000/25,910 xg (1580R) 12,000/16,582 xg (1248R, 1236R, 1580)</p>	<p><b>GRA-G-15-24</b></p> <p><b>GLB-15-FA</b></p>  <p>24 x 15 ml 4,000/3,134 xg</p>	<p><b>GRF-G-15-24</b></p>  <p>24 x 15 ml 8,000/ 7,370 xg (inner) / 8,872 xg (outer) only for R models</p>	<p><b>GRF-G-m2.0-30</b></p>  <p>30 x 2.0 ml 15,000/24,249 xg (1580R, 1580) 12,000/15,520 xg (1248R, 1248, 1236R)</p>	<p><b>GRF-G-s0.2-64</b></p>  <p>8 x PCR strip (8-tube) 12,000 9,434 xg (inner) / 10,803 xg (outer)</p>									

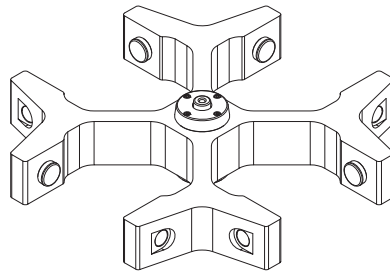
# 1248/R, 1236R, 1580/R

## Multi-Purpose, High-Speed Centrifuges

### Swing-Out Rotor, GRS-G-750-4

4 loadings  
 90°

only for 1580, 1580R



Bioseal Bucket with O-ring

#### Bioseal 750 ml Round Bucket GLB-b750-750 / GLB-750-750

Bucket bore (Φx L, mm) : 99 x 101.5  
 Radius (mm) : 205  
 Max. RPM : 4,000  
 Max. RCF : 3,067 xg  
 Max. height for tube fit (mm) : 130 (w/ cap) / 142 (w/o cap)

\* GLB-b750-750 includes bioseal cap.

Tube											
Tube capacity (ml)	3	5	10	15	15 ml conical	50	50 ml conical	250	c250	c500	750
Tube rack											None
Cat. No.	GAM-5-24(750)		GAM-10-21 (750)	GAM-15-19 (750)	GAM-c15-14 (750)	GAM-50-7 (750)	GAM-c50-5 (750)	GAS-250 (750)	GAS-c250 (750)	GAS-c500 (750)	-
Rack capacity (ea/4)	24/96		21/84	19/76	14/56	7/28	5/20	1/4	1/4	1/4	1/4
Hole dimension (Φx L, mm)	13.2 x 58	13.2 x 85	16 x 85	17.2 x 85	17 x 85	29.2 x 87	29.2 x 88	62.3 x 87	60.5 x 125	95.6 x 58	-



500 ml Round Bucket  
 GLB-500-750  
 Bucket bore (Φx L, mm) : 69.2 x 135  
 Radius (mm) : 218  
 Max. RPM : 4,000  
 Max. RCF : 3,900 xg  
 Max. height for tube fit (mm) : 165

Tube	
Tube capacity (ml)	500
Bucket capacity (ea/4)	1/4



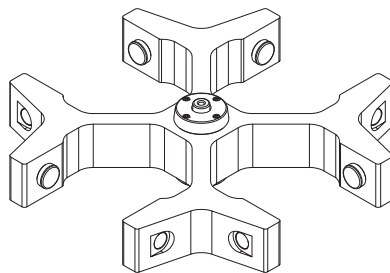
Microplate Holder  
 GLP-mw-750  
 Bucket bore (w x d x h, mm) : 88 x 128.5 x 80  
 Radius (mm) : 171.5  
 Max. RPM : 4,000  
 Max. RCF : 3,068 xg

Plate		
Plate capacity (ml)	MTP	DWP
Holder capacity (ea/4)	4/16	1/4

**Swing-Out Rotor, GRS-G-r750-4**

4 loadings  
 ↘ 90°

only for 1580, 1580R



**Rectangular 750 ml Bucket  
 GLB-r750-r750**

Bucket bore (w x d x h, mm) :  
 99 x 99 x 98  
 Radius (mm) : 200  
 Max. RPM : 3,600  
 Max. RCF : 2,898 xg  
 Max. height for tube fit (mm) : 135

Tube								
Tube capacity (ml)	3	5	10	15	15 ml conical	50	50 ml conical	250
Tube rack								
Cat. No.	GAM-5-30(r750)		GAM-15-20(r750)		GAM-c15-16(r750)	GAM-50-8(r750)	GAM-c50-5(r750)	GAS-250(r750)
Rack capacity (ea/4)	30/125		20/80		16/64	8/32	5/20	1/4
Hole dimension (Φ x L, mm)	13 x 56.5	13 x 85	17.2 x 85		17.5 x 85	29.5 x 85		62.5 x 87



**500 ml Round Bucket  
 GLB-500-r750**

Bucket bore (Φ x L, mm) : 69.2 x 135  
 Radius (mm) : 218  
 Max. RPM : 3,600  
 Max. RCF : 3,159 xg  
 Max. height for tube fit (mm) : 165

Tube	
Tube capacity (ml)	500
Bucket capacity (ea/4)	1/4



**Microplate Holder  
 GLP-mw-r750**

Bucket bore (w x d x h, mm)  
 : 88 x 128.5 x 80  
 Radius (mm) : 171.5  
 Max. RPM : 3,600  
 Max. RCF : 2,485 xg

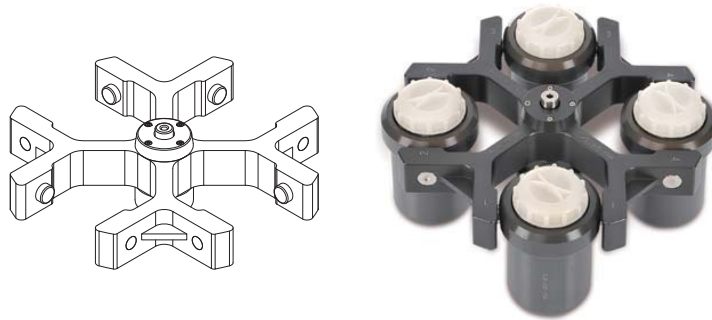
Plate		
Plate capacity (ml)	MTP	DWP
Holder capacity (ea/4)	4/16	1/4

# 1248/R, 1236R, 1580/R


## Multi-Purpose, High-Speed Centrifuges

### Swing-Out Rotor, GRS-G-250-4

4 loadings  
 ↘ 90°




<b>250 ml Round Bucket</b> <b>GLB-250-250</b> Bucket bore (ΦxL, mm) : 62 x 109 Radius (mm) : 193 Max. RPM : 5,000 Max. RCF : 5,394 xg Max. height for tube fit (mm) : 153
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Tube	
Tube capacity (ml)	250
Bucket Capacity (ea/4)	1/4




<b>250 ml Conical Bucket</b> <b>GLB-c250-250</b> Bucket bore (ΦxL, mm) : 60.5 x 130.2 Radius (mm) : 193 Max. RPM : 5,000 Max. RCF : 5,394 xg Max. height for tube fit (mm) : 153
--

Tube	
Tube capacity (ml)	250 ml Conical
Bucket Capacity (ea/4)	1/4




<b>60 ml Syringe Bucket</b> <b>GLB-60-250</b> Bucket bore (ΦxL, mm) : 31.5 x 130.2 Radius (mm) : 193 Max. RPM : 5,000 Max. RCF : 5,394 xg Max. height for tube fit (mm) : 165
---

Tube	
Tube capacity (ml)	60 ml Syringe
Bucket Capacity (ea/4)	1/4

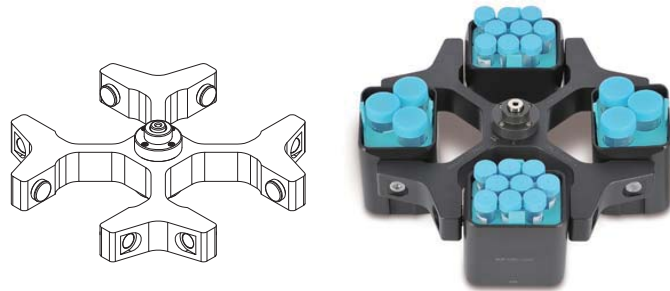


<b>Dual Syringe Bucket</b> <b>GLB-d20/10-250</b> Bucket bore (ΦxL, mm) : 22.5 x 100 (20) / 16 x 90 (10) Radius (mm) : 160 / 170 Max. RPM : 5,000 Max. RCF : 4,472 xg / 4,752 xg Max. height for tube fit (mm) : 132/125
--

Tube	
Tube capacity (ml)	20/10 ml Syringe
Bucket Capacity (ea/4)	2/8

**Swing-Out Rotor, GRS-G-r250-4**

4 loadings  
 ↗ 90°



**Rectangular 250 ml Bucket  
 GLB-r250-r250**  
 Bucket bore (w x d x h, mm)  
 : 86 x 70.3 x 102.5  
 Radius (mm) : 175.2  
 Max. RPM : 4,000  
 Max. RCF : 3,134 xg  
 Max. height for tube fit (mm) : 130

Tube										
Tube capacity (ml)	3	5	10	15	15 ml conical	50	50 ml conical	15	85	250
Tube rack										
Cat. No.	GAM-5-12(r250)		GAM-15-12(r250)		GAM-c15-9(r250)	GAM-50-4(r250)	GAM-c50-3(r250)	GAM-85-2(r250)		GAS-250(r250)
Rack capacity (ea/4)	12/48		12/48		9/36	4/16	3/12	2/8		1/4
Hole dimension (Φx L, mm)	13.5 x 58	13.5 x 80	17.5 x 90		17.5 x 90	30.2 x 90	30.5 x 90	17 x 86.5	38.5 x 86.5	62.5 x 87



**Microplate Holder  
 GLP-mw-r250**  
 Bucket bore (w x d x h, mm)  
 : 88 x 128.5 x 80  
 Radius (mm) : 153  
 Max. RPM : 4,000  
 Max. RCF : 2,737 xg

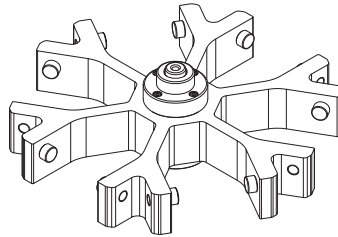
Plate		
Plate capacity (ml)	MTP	DWP
Holder capacity (ea/4)	4/16	1/4

# 1248/R, 1236R, 1580/R

## Multi-Purpose, High-Speed Centrifuges

### Swing-Out Rotor, GRS-G-100-6

6 loadings  
 ↗ 90°



Bioseal Bucket with O-ring

#### Bioseal 100 ml Bucket GLB-b100-100

Bucket bore (Φx L, mm) : 47 x 99  
 Radius (mm) : 173.6  
 Max. RPM : 4,000  
 Max. RCF : 3,105 xg  
 Max. height for tube fit (mm)  
 : 120 (w/ cap) / 130 (w/o cap)

Tube										
Tube capacity (ml)	1.5~2.0	2.6~7	4~10	9~15	15 ml conical	15 ml conical	50	50 ml conical	85	100
Tube rack										
Cat. No.	GAM-m2.0-6 (b100)	GAM-7-5 (b100)	GAM-10-5 (b100)	GAM-15-3 (100)	GAM-c15-3 (100)	GAS-c15 (b100)	GAS-50 (b100)	GAS-c50 (b100)	GAS-85 (b100)	GAS-100 (b100)
Rack capacity (ea/6)	6/36	5/30	5/30	3/18	3/18	1/6	1/6	1/6	1/6	1/6
Hole dimension (Φx L, mm)	11 x 39	13.5 x 60	16 x 60	17.2 x 105	17.2 x 106.5	17.2 x 106.5	29.5 x 95.9	30 x 100	38.5 x 106.4	44.2 x 106.4

\* (b100) adaptors work fine with bioseal capping but [100] adaptors not.



#### Vacutainer 10 ml Bucket GLB-10-8-100

Bucket capacity : 8/ea  
 Bucket bore (Φx L, mm) : 16 x 89  
 Radius (mm) : 176.7  
 Max. RPM : 4,000  
 Max. RCF : 3,105 xg  
 Max. height for tube fit (mm) : 120

Tube	
Tube capacity (ml)	10
Bucket capacity (ea/6)	8/48



#### Bioseal Dual 15 ml Round Bucket GLB-bd15-100

Bucket capacity : 2/ea  
 Bucket bore (Φx L, mm) : 17 x 98  
 Radius (mm) : 169.5  
 Max. RPM : 4,000  
 Max. RCF : 3,032 xg  
 Max. height for tube fit (mm) : 120

Tube	
Tube capacity (ml)	15
Bucket capacity (ea/6)	2/12



#### Bioseal Dual 15 ml Conical Bucket GLB-bdc15-100

Bucket capacity : 2/ea  
 Bucket bore (Φx L, mm) : 17 x 104  
 Radius (mm) : 173.6  
 Max. RPM : 4,000  
 Max. RCF : 3,105 xg  
 Max. height for tube fit (mm)  
 : 123 (w/ cap) / 127 (w/o cap)

Tube	
Tube capacity (ml)	15 ml conical
Bucket capacity (ea/6)	2/12



#### Bioseal 50 ml Bucket GLB-b50-100

Bucket capacity : 1/ea  
 Bucket bore (Φx L, mm) : 30.5 x 97  
 Radius (mm) : 169.5  
 Max. RPM : 4,000  
 Max. RCF : 3,032 xg  
 Max. height for tube fit (mm)  
 : 115 (w/ cap) / 125 (w/o cap)

Tube				
Tube capacity (ml)	15	15 ml conical	50 ml conical	50
Adaptor				None
Cat. No.	GAS-u15(50)		GAS-c50(50)	-
Adaptor bore (Φx L, mm)	17.3 x 87		29.5 x 17.5	-





**Fixed Angle Rotor, GRF-G-250-6**

6 x (250 & 15 ml)  
 ∟ 25°  
 Hole diameter (250/15) (mm) : 62/17  
 Max height for tube fit (250/15) (mm) : 130/120













only for 1580R

Tube		
Tube capacity (ml)	15	250
Radius (mm)	131.3	134
Max. RPM	8,000	
Max. RCF (g-force)	9,395	9,588

**Fixed Angle Rotor, GRF-G-85-6**

6 x 85 ml  
 ∟ 34°  
 Hole diameter (mm) : 38.5  
 Max. height for tube fit (mm) : 122



Tube						
Tube capacity (ml)	10	15	15 ml conical	50	50 ml conical	85
Adaptor						None
Cat. No.	<b>GAS-15(85)</b>		<b>GAS-c15(85)</b>	<b>GAS-50(85)</b>	<b>GAS-c50(85)</b>	-
Adaptor bore (Φ x L, mm)	17 x 94		17 x 98	29 x 95	29.5 x 98	-
Radius (mm)	102	103	101	104	102	110
Max. RPM (1580R)	12,000					
Max. RCF (g-force) (1580R)	16,424	16,582	16,260	16,743	16,421	17,709
Max. RPM (1248/1248R/1236R/1580)	10,000					
Max. RCF (g-force) (1248/1248R/1236R/1580)	11,404	11,515	11,292	11,627	11,404	12,298

# 1248/R, 1236R, 1580/R

## Multi-Purpose, High-Speed Centrifuges

### Fixed Angle Rotor, GRF-G-50-8

8 x 50 ml  
 ∠ 30°  
 Hole diameter (mm) : 29.5  
 Max. height for tube fit (mm) : 120  
 Supplied with aerosol tight O-ring



for 1248R, 1236R, 1580, 1580R

Tube				
Tube capacity (ml)	10	15	15 ml conical	50
Adaptor				None
Cat. No.	GAS-15(50)		GAS-c15(50)	-
Adaptor bore (Φ x L, mm)	17 x 94		17 x 105	-
Radius (mm)	92.5	93.5	96	103
Max. RPM (1580R)	15,000			
Max. RCF (g-force) (1580R)	23,268	23,520	24,149	25,910
Max. RPM (1248R/1236R/1580)	12,000			
Max. RCF (g-force) (1248R/1236R/1580)	14,892	15,053	15,455	16,582

### Angle Rotor, GRA-G-15-24

24 x 15 ml  
 ∠ 45°  
 Hole diameter (mm) : 18  
 Max. height for tube fit (mm) : 125 (120 for conical tube)




Stainless Steel 15 ml Sleeve  
**GLB-15-FA**  
 Sleeve bore (Φ x L, mm) : 18 x 97.5  
 Radius (mm) : 175.2  
 Max. RPM : 4,000  
 Max. RCF : 3,134 xg

Tube						
Tube capacity (ml)	3	4	5	10	15	15 ml conical
Adaptor				None	None	None
Cat. No.	GAS-3(15)	GAS-4(15)	GAS-5(15)	-	-	-
Adaptor bore (Φ x L, mm)	13.5 x 61	13.5 x 65	13.5 x 85	-	-	-
Radius (mm)	155.2	158.2	167.2	174.5	175.5	171.5
Max. RPM	4,000					
Max. RCF (g-force)	2,776	2,830	2,990	3,121	3,134	3,068

**Fixed Angle Rotor, GRF-G-15-24**

24 x 15 ml  
 ∟ 30°  
 Hole diameter (mm) : 17.5  
 Max. height for tube fit (mm) : 115  
 Supplied with aerosol tight O-ring








Tube	
Tube capacity (ml)	15
Radius (mm)	103 (inner) / 124 (outer)
Max. RPM	8,000
Max. RCF (g-force)	7,370 (inner) / 8,872 (outer)

for 1248R, 1236R, 1580R

**Fixed Angle Rotor, GRF-G-m2.0-30**

30 x 1.5/2.0 ml  
 ∟ 45°  
 Hole diameter (mm) : 11.1  
 Max. height for tube fit (mm) : 52  
 Supplied with aerosol tight O-ring





Tube			
Tube capacity (ml)	0.2	0.5	1.5/2.0
Adaptor			None
Cat. No.	GAS-m0.2(2)	GAS-m0.5(2)	-
Adaptor bore (Φ x L, mm)	6.5 x 23	8 x 31	-
Radius (mm)	79	86	96.4
Max. RPM (1580R/1580)	15,000		
Max. RCF (g-force) (1580R/1580)	19,872	21,633	24,249
Max. RPM (1248/1248R/1236R)	12,000		
Max. RCF (g-force) (1248/1248R/1236R)	12,718	13,835	15,520

**PCR Rotor, GRF-G-s0.2-64**

8 x 8-tube PCR strips, 64 x 0.2 ml  
 ∟ 45°  
 Hole diameter (mm) : 6.5  
 Max. height for tube fit (mm) : 16



Tube		
Tube capacity (ml)	0.2	8-tube PCR strip
Radius (mm)	58.6 (inner) / 67.1 (outer)	
Max. RPM	12,000	
Max. RCF (g-force)	9,434 (inner) / 10,803 (outer)	

1736R

Large Capacity, High-Speed Centrifuge

# 1736R

High-Speed, Refrigerated Floor Centrifuge with space-saving compact design



- | The 1736R, a multi-purpose, large capacity, floor-standing centrifuge designed for large-volume daily-working laboratories
- | For up to 17,000 rpm (32,310 x g) with 6 x 50 ml tubes and 8,000 rpm (11,305 x g) with 6 x 500 ml tubes
- | The short working height of 84 cm (33 inches) ensures easy loading and unloading.
- | With motorized lid mechanics, only a gentle touch is sufficient to close and open the lid.
- | Lid drop protection design allows easiness and safety when loading or unloading samples.
- | A large assortment of rotors, buckets and adaptors support diverse applications doable with one instrument.
- | Fast cooling function to 4°C in 5 minutes for fast startup of cooled samples
- | The compressor-off function when lid is open minimizes unnecessary cooling and frosting.
- | Intuitive control interface with numeric input buttons allows easy setting and editing of running conditions.
- | Selectable time mode of "at set SPEED" for counting running time only when reached the set speed
- | A separate "PULSE" key for quick spin
- | Parameters can be changed during operation.
- | Key lock function helps the set parameters secured during operation.



**Applications** Ideal for all kinds of basic and analytical experiments such as phenol extraction, NA preparation, cell harvest, precipitation, density gradient separation, etc

**Technical Specifications**

Max. RPM/RCF	Fixed angle	17,000 / 32,310 xg	Program memory	100
	Swing-out	4,000 / 3,134 xg	Display	Blue LCD
Max. capacity	Fixed angle	6 x 500 ml, 30 x 1.5/2.0 ml	Automatic rotor identification	Yes
	Swing-out	4 x 250 ml, 48 x 15 ml, 16 MTPs	Imbalance cut-off	Yes
Temp. range (°C)		-20 to +40	Safety lid lock	Yes
FAST cool button		Yes	Lid drop protection	Yes
Time control		Pulse, timed < 10 hr or continuous	Motorized lid open & close	Yes
Time counting modes		Selectable, at set speed or from starting	Power supply (V/Hz)	220/50-60 (110V optional)
RPM/RCF conversion		Yes	Power requirement (kVA)	2.5
Noise level (dB)		≤ 56	Dimension (W x D x H, mm)	473 x 610 x 830
ACC/DEC		9 / 10 steps	Weight without rotor (kg)	110
Parameters on display window		RPM (RCF), Oper Status, Lid Open/Close, Hr:Min, Temp, ACC, DEC	CE mark	Yes
			Cat. No.	GZ-1736R

**Rotors Overview**

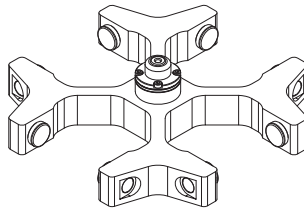
<p><b>GRS-L-r250-4</b></p> <p>GLB-r250-r250 4 x 250 ml 4,000/3,134 xg</p> <p>GLP-mw-r250 4 x 4 MTPs 4,000/2,737 xg</p>		<p><b>GRF-L-500-6</b></p>  <p>6 x 500 ml 8,000/11,305 xg</p>	<p><b>GRF-L-250-6</b></p>  <p>6 x (250 &amp; 15 ml) 10,000/14,981 xg (15ml:14679xg)</p>	<p><b>GRF-L-85-6</b></p>  <p>6 x 85 ml 15,000/25,029 xg</p>	<p><b>GRF-L-50-8</b></p>  <p>8 x 50 ml 15,000/25,910 xg</p>
<p><b>GRF-L-50-6</b></p>  <p>6 x 50 ml 17,000/32,310 xg</p>	<p><b>GRF-L-c50-6</b></p>  <p>6 x 50 ml (C) 15,000/24,753 xg</p>	<p><b>GRF-L-15-12</b></p>  <p>12 x 15 ml 17,000/32,310 xg</p>	<p><b>GRF-L-c15-12</b></p>  <p>12 x 15 ml (C) 15,000/25,910 xg</p>	<p><b>GRF-L-m2.0-30</b></p>  <p>30 x 2.0 ml 17,000/31,147 xg</p>	<p><b>GRF-L-s0.2-64</b></p>  <p>8 x PCR strip (8-tube) 12,000 9,434 xg (inner) / 10,803 xg (outer)</p>

# 1736R

## Large Capacity, High-Speed Centrifuge

### Swing-Out Rotor, GRS-L-r250-4

4 loadings  
 ↻ 90°



Rectangular 250 ml Bucket  
**GLB-r250-r250**

Bucket bore (w x d x h, mm)  
 : 86 x 70.3 x 102.5  
 Radius (mm) : 175.2  
 Max. RPM : 4,000  
 Max. RCF : 3,134 xg  
 Max. height for tube fit (mm) : 130

Tube										
Tube capacity (ml)	3	5	10	15	15 ml conical	50	50 ml conical	15	85	250
Tube rack										
Cat. No.	<b>GAM-5-12(r250)</b>		<b>GAM-15-12(r250)</b>		<b>GAM-c15-9(r250)</b>	<b>GAM-50-4(r250)</b>	<b>GAM-c50-3(r250)</b>	<b>GAM-85-2(r250)</b>		<b>GAS-250(r250)</b>
Rack capacity (ea/4)	12/48		12/48		9/36	4/16	3/12	2/8		1/4
Hole dimension (Φ x L, mm)	13.5 x 58	13.5 x 80	17.5 x 90		17.5 x 90	30.2 x 90	30.5 x 90	17 x 86.5	38.5 x 86.5	62.5 x 87



Microplate Holder  
**GLP-mw-r250**

Bucket bore (w x d x h, mm)  
 : 88 x 128.5 x 80  
 Radius (mm) : 153  
 Max. RPM : 4,000  
 Max. RCF : 2,737 xg

Plate		
Plate capacity (ml)	MTP	DWP
Holder capacity (ea/4)	4/16	1/4

### Fixed Angle Rotor, GRF-L-500-6

6 x 500 ml  
 ↻ 25°  
 Hole diameter (mm) : 70  
 Max. height for tube fit (mm) : 170



Tube	
Tube capacity (ml)	500
Radius (mm)	158
Max. RPM	8,000
Max. RCF (g-force)	11,305



**Fixed Angle Rotor, GRF-L-250-6**

6 x (250 & 15 ml)  
 ∟ 25°  
 Hole diameter (250/15) (mm) : 62/17  
 Max. height for tube fit (250/15) (mm) : 130/120













Tube		
Tube capacity (ml)	15	250
Radius (mm)	131.3	134
Max. RPM	10,000	
Max. RCF (g-force)	14,679	14,981

**Fixed Angle Rotor, GRF-L-85-6**

6 x 85 ml  
 ∟ 25°  
 Hole diameter (mm) : 38.3  
 Max. height for tube fit (mm) : 125  
*Supplied with aerosol tight O-ring*



Tube						
Tube capacity (ml)	10	15	15 ml conical	50	50 ml conical	85
Adaptor						None
Cat. No.	GAS-15(85)		GAS-c15(85)	GAS-50(85)	GAS-c50(85)	-
Adaptor bore (Φx L, mm)	17 x 94		17 x 98	29 x 95	29.5 x 98	-
Radius (mm)	91.5	92.5	90.5	93.5	91.5	99.5
Max. RPM	15,000					
Max. RCF (g-force)	23,017	23,268	22,765	23,520	23,017	25,029

# 1736R

## Large Capacity, High-Speed Centrifuge



### Fixed Angle Rotor, GRF-L-50-8

8 x 50 ml  
 $\beta$  30°  
 Hole diameter (mm) : 29.5  
 Max. height for tube fit (mm) : 120  
 Supplied with aerosol tight O-ring

Tube				
Tube capacity (ml)	10	15	15 ml conical	50
Adaptor				None
Cat. No.	GAS-15(50)		GAS-c15(50)	-
Adaptor bore (Φ x L, mm)	17 x 94		17 x 105	-
Radius (mm)	92.5	93.5	96	103
Max. RPM	15,000			
Max. RCF (g-force)	23,268	23,520	24,149	25,910



### Fixed Angle Rotor, GRF-L-50-6

6 x 50 ml  
 $\beta$  30°  
 Hole diameter (mm) : 29.5  
 Max. height for tube fit (mm) : 120  
 Supplied with aerosol tight O-ring

Tube				
Tube capacity (ml)	10	15	15 ml conical	50
Adaptor				None
Cat. No.	GAS-15(50)		GAS-c15(50)	-
Adaptor bore (Φ x L, mm)	17 x 94		17 x 105	-
Radius (mm)	89.5	90.5	93	100
Max. RPM	17,000			
Max. RCF (g-force)	28,918	29,241	30,048	32,310

### Fixed Angle Rotor, GRF-L-c50-6

6 x 50 ml conical  
 $\beta$  25°  
 Hole diameter (mm) : 29.5  
 Max. height for tube fit (mm) : 125  
 Supplied with aerosol tight O-ring



Tube		
Tube capacity (ml)	15 ml conical	50 ml conical
Adaptor		None
Cat. No.	GAS-c15(50)	-
Adaptor bore (Φ x L, mm)	17 x 105	-
Radius (mm)	96	98.4
Max. RPM	15,000	
Max. RCF (g-force)	24,149	24,753





**Fixed Angle Rotor, GRF-L-15-12**

12 x 15 ml  
 ∟ 30°  
 Hole diameter (mm) : 17  
 Max. height for tube fit (mm) : 125  
 Supplied with aerosol tight O-ring

Tube		
Tube capacity (ml)	10	15
Radius (mm)	100	
Max. RPM	17,000	
Max. RCF (g-force)	32,310	



**Fixed Angle Rotor, GRF-L-c15-12**

12 x 15 ml conical  
 ∟ 25°  
 Hole diameter (mm) : 17  
 Max. height for tube fit (mm) : 125  
 Supplied with aerosol tight O-ring

Tube	
Tube capacity (ml)	15 ml conical
Radius (mm)	103
Max. RPM	15,000
Max. RCF (g-force)	25,910



**Fixed Angle Rotor, GRF-L-m2.0-30**

30 x 1.5/2.0 ml  
 ∟ 45°  
 Hole diameter (mm) : 11.1  
 Max. height for tube fit (mm) : 52  
 Supplied with aerosol tight O-ring

Tube			
Tube capacity (ml)	0.2	0.5	1.5/2.0
Adaptor			None
Cat. No.	<b>GAS-m0.2(2)</b>	<b>GAS-m0.5(2)</b>	-
Adaptor bore (Φ x L, mm)	6.5 x 23	8 x 31	-
Radius (mm)	79	86	96.4
Max. RPM	17,000		
Max. RCF (g-force)	25,525	27,787	31,147



**PCR Rotor, GRF-L-s0.2-64**

8 x 8-tube PCR strips, 64 x 0.2 ml  
 ∟ 45°  
 Hole diameter (mm) : 6.5  
 Max. height for tube fit (mm) : 16



Tube		
Tube capacity (ml)	0.2	8-tube PCR strip
Radius (mm)	58.6 (inner) / 67.1 (outer)	
Max. RPM	12,000	
Max. RCF (g-force)	9,434 (inner) / 10,803 (outer)	

2236R

Large Capacity, High-Speed Centrifuge

# 2236R

Large Capacity and High-Speed Refrigerated Floor Centrifuge



## | Applications

- Ideal for a wide range of experiments from simple precipitation and separation to filtering, concentration, precipitations, density gradient separation, etc.
- Clinical, industrial, academic and scientific separation applications



- | The 2236R, a large capacity, high-speed, floor-standing centrifuge designed for multi-user environment
- | Ideal for large volume harvesting in cellular and molecular biology works, clinical preparations, industrial applications, etc.
- | For up to 22,000 rpm (54,111 xg) with 6 x 50 ml tubes and 7,000 rpm (10,825 xg) with 6 x 1 L bottles
- | Instrument lock/unlock by password control and protocol management by user ID is ideal for core lab facility or multi-user environment
- | A large assortment of rotors, buckets and adaptors support diverse applications doable with one instrument.
  
- | Fast cooling function to 4°C in 5 minutes for fast startup of cooled samples
- | The compressor-off function when lid is open minimizes unnecessary cooling and frosting.
- | With motorized lid mechanics, only a gentle touch is sufficient to close and open the lid.
- | Lid drop protection design allows easiness and safety when loading or unloading samples.
  
- | Intuitive control interface with numeric input buttons and graphic pictograms for easy setting and editing of running conditions.
- | Windows CE based 7" LCD Touch Screen with simultaneous display of all the parameters of set and actual values.
- | Selectable time mode of "at set SPEED" for counting running time only when reached the set speed
- | Up to 5 protocols per run can be combined for convenient operation of complicated experiments.
- | The parameters of TIME, TEMP, ACC and DEC are allowed to be changed during operation.

## Technical Specifications

Max. RPM/RCF	Fixed angle	22,000 / 54,111 xg	Parameters on display window	Simultaneous display of all parameters of set and actual figures
	Swing-out	4,000 / 3,134 xg		
Max. capacity	Fixed angle	6 x 1,000 ml, 30 x 1.5/2.0 ml	Automatic rotor identification	Yes
	Swing-out	4 x 250 ml, 48 x 15 ml, 16 MTPs	Imbalance cut-off	Yes
Temp. range (°C)		-20 to +40	Safety lid lock	Yes
FAST cool button		Yes	Lid drop protection	Yes
Time control		Timed < 100 hr or continuous	Motorized lid open & close	Yes
Time counting modes		Selectable, at set speed or from starting	Automatic lid release at completion	Yes
OS / Control Display		Windows CE / 7" touch screen	Power supply (V/Hz)	220/50~60 (110V optional)
RPM/RCF conversion		Yes	Power requirement (kVA)	4.0
Noise level (dB)		≤ 56	Dimension (W x D x H, mm)	824 x 634 x 1,049
ACC/DEC		9/10 steps	Weight without rotor (kg)	240
Program memory		100	CE mark	Yes
			Cat. No.	GZ-2236R

# 2236R

## Large Capacity, High-Speed Centrifuge

### Rotors Overview

<b>GRS-L-r250-4</b> <b>GLB-r250-r250</b> <b>GLP-mw-r250</b>   4 x 250 ml 4,000/3,134 xg      4 x 4 MTPs 4,000/2,737 xg		<b>GRF-L-1000-6</b>  6 x 1,000 ml 7,000/10,825 xg	<b>GRF-L-1000-4</b>  4 x 1,000 ml 8,000/12,071 xg	<b>GRF-L-500-6</b>  6 x 500 ml 10,000/17,664 xg	<b>GRF-L-250-6</b>  6 x (250 & 15 ml) 13,000/25,318 xg (15 ml: 24,808 xg)	<b>GRF-L-85-6</b>  6 x 85 ml 20,000/44,496 xg
<b>GRF-L-50-8</b>  8 x 50 ml 20,000/46,062 xg	<b>GRF-L-50-6</b>  6 x 50 ml 22,000/54,111 xg	<b>GRF-L-c50-6</b>  6 x 50 ml (C) 17,000/31,793 xg	<b>GRF-L-15-12</b>  12 x 15 ml 20,000/44,720 xg	<b>GRF-L-c15-12</b>  12 x 15 ml (C) 20,000/46,062 xg	<b>GRF-L-m2.0-30</b>  30 x 2.0 ml 22,000/52,163 xg	<b>GRF-L-s0.2-64</b>  8 x PCR strip (8-tube) 12,000 9,434 xg (inner) / 10,803 xg (outer)

### Intuitive Control Interfaces

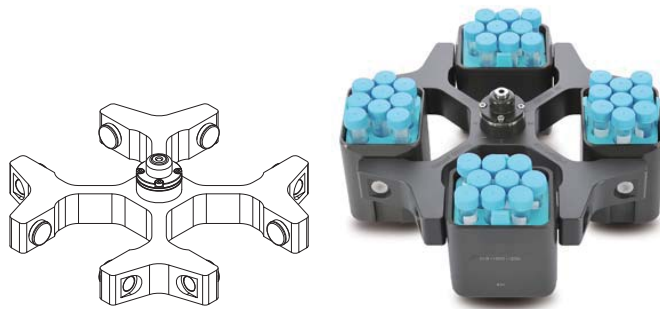


The control interface consists of several screens:

- Main Control Screen:** Displays speed (e.g., 9000, 22000), time (e.g., 00:59:11, 99:59:00), temperature (e.g., 20°C, 18°C, 15°C), and rotor type (e.g., GRF-L-500-6, GRF-L-50-6, GRF-L-50-5). Includes a large 'START' button and a 'MENU' button.
- Parameter List Screen:** A table for configuring parameters like rotor name, speed, time, and temperature.
- ACC (Acceleration) Screen:** A numeric keypad for setting acceleration values (e.g., 6, 9).
- DEC (Deceleration) Screen:** A numeric keypad for setting deceleration values (e.g., 4, 4).
- STOP Screen:** Shows 'STOP' and 'RUNNING' status with a speed indicator (e.g., 22000, 54,111 xg).
- TEMP (Temperature) Screen:** A slider and keypad for setting temperature (e.g., 4°C).
- NUMPAD Screen:** A numeric keypad for entering values (e.g., 22000, 45616).

**Swing-Out Rotor, GRS-L-r250-4**

4 loadings  
 90°



Rectangular 250 ml Bucket  
**GLB-r250-r250**  
 Bucket bore (w x d x h, mm)  
 : 86 x 70.3 x 102.5  
 Radius (mm) : 175.2  
 Max. RPM : 4,000  
 Max. RCF : 3,134 xg  
 Max. height for tube fit (mm) : 130

Tube										
Tube capacity (ml)	3	5	10	15	15 ml conical	50	50 ml conical	15	85	250
Tube rack										
Cat. No.	<b>GAM-5-12(r250)</b>		<b>GAM-15-12(r250)</b>		<b>GAM-c15-9(r250)</b>	<b>GAM-50-4(r250)</b>	<b>GAM-c50-3(r250)</b>	<b>GAM-85-2(r250)</b>		<b>GAS-250(r250)</b>
Rack capacity (ea/4)	12/48		12/48		9/36	4/16	3/12	2/8		1/4
Hole dimension (Φ x L, mm)	13.5 x 58	13.5 x 80	17.5 x 90		17.5 x 90	30.2 x 90	30.5 x 90	17 x 86.5	38.5 x 86.5	62.5 x 87




Microplate Holder  
**GLP-mw-r250**  
 Bucket bore (w x d x h, mm)  
 : 88 x 128.5 x 80  
 Radius (mm) : 153  
 Max. RPM : 4,000  
 Max. RCF : 2,737 xg

Plate		
Plate capacity (ml)	MTP	DWP
Holder capacity (ea/4)	4/16	1/4


**Fixed Angle Rotor, GRF-L-1000-6**

6 x 1000 ml  
 ∟ 25°  
 Hole diameter (mm) : 98  
 Max. height for tube fit (mm) : 175

Tube	
Tube capacity (ml)	1,000
Radius (mm)	197.6
Max. RPM	7,000
Max. RCF (g-force)	10,825


**Fixed Angle Rotor, GRF-L-1000-4**

4 x 1000 ml  
 ∟ 25°  
 Hole diameter (mm) : 98  
 Max. height for tube fit (mm) : 175

Tube	
Tube capacity (ml)	1,000
Radius (mm)	168.7
Max. RPM	8,000
Max. RCF (g-force)	12,071

**Fixed Angle Rotor, GRF-L-500-6**

6 x 500 ml  
 ∟ 25°  
 Hole diameter (mm) : 70  
 Max. height for tube fit (mm) : 170



Tube	
Tube capacity (ml)	500
Radius (mm)	158
Max. RPM	10,000
Max. RCF (g-force)	17,664



**Fixed Angle Rotor, GRF-L-250-6**

6 x (250 & 15 ml)  
 ∟ 25°  
 Hole diameter (250/15) (mm) : 62/17  
 Max. height for tube fit (250/15) (mm) : 130/120













Tube		
Tube capacity (ml)	15	250
Radius (mm)	131.3	134
Max. RPM	13,000	
Max. RCF (g-force)	24,808	25,318



**Fixed Angle Rotor, GRF-L-85-6**

6 x 85 ml  
 ∟ 25°  
 Hole diameter (mm) : 38.3  
 Max. height for tube fit (mm) : 125  
 Supplied with aerosol tight O-ring



Tube						
Tube capacity (ml)	10	15	15 ml conical	50	50 ml conical	85
Adaptor						None
Cat. No.	GAS-15(85)		GAS-c15(85)	GAS-50(85)	GAS-c50(85)	-
Adaptor bore (Φ x L, mm)	17 x 94		17 x 98	29 x 95	29.5 x 98	-
Radius (mm)	91.5	92.5	90.5	93.5	91.5	99.5
Max. RPM	20,000					
Max. RCF (g-force)	40,919	41,366	40,472	41,813	40,919	44,496

# 2236R

## Large Capacity, High-Speed Centrifuge



### Fixed Angle Rotor, GRF-L-50-8

8 x 50 ml  
 ∟ 30°  
 Hole diameter (mm) : 29.5  
 Max. height for tube fit (mm) : 120  
 Supplied with aerosol tight O-ring

Tube				
Tube capacity (ml)	10	15	15 ml conical	50
Adaptor				None
Cat. No.	GAS-15(50)		GAS-c15(50)	-
Adaptor bore (Φ x L, mm)	17 x 94		17 x 105	-
Radius (mm)	92.5	93.5	96	103
Max. RPM	20,000			
Max. RCF (g-force)	41,366	41,813	42,931	46,062



### Fixed Angle Rotor, GRF-L-50-6

6 x 50 ml  
 ∟ 30°  
 Hole diameter (mm) : 29.5  
 Max. height for tube fit (mm) : 120  
 Supplied with aerosol tight O-ring

Tube				
Tube capacity (ml)	10	15	15 ml conical	50
Adaptor				None
Cat. No.	GAS-15(50)		GAS-c15(50)	-
Adaptor bore (Φ x L, mm)	17 x 94		17 x 105	-
Radius (mm)	89.5	90.5	93	100
Max. RPM	22,000			
Max. RCF (g-force)	48,430	48,971	50,323	54,111

### Fixed Angle Rotor, GRF-L-c50-6

6 x 50 ml conical  
 ∟ 25°  
 Hole diameter (mm) : 29.5  
 Max. height for tube fit (mm) : 125  
 Supplied with aerosol tight O-ring



Tube		
Tube capacity (ml)	15 ml conical	50 ml conical
Adaptor		None
Cat. No.	GAS-c15(50)	-
Adaptor bore (Φ x L, mm)	17 x 105	-
Radius (mm)	96	98.4
Max. RPM	15,000	
Max. RCF (g-force)	24,149	24,753





**Fixed Angle Rotor, GRF-L-15-12**

12 x 15 ml  
 ∟ 30°  
 Hole diameter (mm) : 17  
 Max. height for tube fit (mm) : 125  
 Supplied with aerosol tight O-ring

Tube		
Tube capacity (ml)	10	15
Radius (mm)	100	
Max. RPM	20,000	
Max. RCF (g-force)	44,720	



**Fixed Angle Rotor, GRF-L-c15-12**

12 x 15 ml conical  
 ∟ 25°  
 Hole diameter (mm) : 17  
 Max. height for tube fit (mm) : 125  
 Supplied with aerosol tight O-ring

Tube	
Tube capacity (ml)	15 ml conical
Radius (mm)	103
Max. RPM	20,000
Max. RCF (g-force)	46,062



**Fixed Angle Rotor, GRF-L-m2.0-30**

30 x 1.5/2.0 ml  
 ∟ 45°  
 Hole diameter (mm) : 11.1  
 Max. height for tube fit (mm) : 52  
 Supplied with aerosol tight O-ring

Tube			
Tube capacity (ml)	0.2	0.5	1.5/2.0
Adaptor			None
Cat. No.	<b>GAS-m0.2(2)</b>	<b>GAS-m0.5(2)</b>	-
Adaptor bore (Φ x L, mm)	6.5 x 23	8 x 31	-
Radius (mm)	79	86	96.4
Max. RPM	22,000		
Max. RCF (g-force)	42,748	46,536	52,163



**PCR Rotor, GRF-L-s0.2-64**

8 x 8-tube PCR strips, 64 x 0.2 ml  
 ∟ 45°  
 Hole diameter (mm) : 6.5  
 Max. height for tube fit (mm) : 16



Tube		
Tube capacity (ml)	0.2	8-tube PCR strip
Radius (mm)	58.6 (inner) / 67.1 (outer)	
Max. RPM	12,000	
Max. RCF (g-force)	9,434 (inner) / 10,803 (outer)	

1096R

Large Capacity, High-Speed Centrifuge

# 1096R

Large Capacity Refrigerated Floor Centrifuge



## Applications

- Ideal for diverse clinical, industrial, academic and scientific applications
- Specially designed buckets available for 100 ml glass tubes to analyze oil, milk fat, toxic components, impurities, etc.
- Adaptors available for blood separation in 500 ml & 250 ml blood bags or variable sizes of blood collection tubes



- | The 1096R, large capacity centrifuge designed for large-volume daily-working processes such as high-throughput sample preparation
- | For up to 10,000 rpm (14,981 xg) with 6 x 250 ml tubes and 5,000 rpm (5,009 xg) with filter plate set
  
- | Temperature setting from -10°C to 40°C
- | Fast cooling function to 4°C in 5 minutes for fast startup of cooled samples
- | The compressor-off function when lid is open minimizes unnecessary cooling and frosting.
  
- | With motorized lid mechanics, only a gentle touch is sufficient to close and open the lid.
- | Lid drop protection design allows easiness and safety when loading or unloading samples.
- | The short working height of 84 cm (33 inches) ensures easy loading and unloading.
  
- | Intuitive control interface with numeric input buttons allows easy setting and editing of running conditions.
- | Selectable time mode of "at set SPEED" for counting running time only when reached the set speed
- | A separate "PULSE" key for quick spin
- | Parameters can be changed during operation.
- | Key lock function helps the set-parameters secured during operation.
  
- | A large assortment of rotors, buckets and adaptors support diverse applications doable with one instrument.
- | Windshield rotor with lid available for large capacity swing-out centrifugation
- | Adaptors are available for blood fractionation of variable sizes for blood bags or blood collection tubes.
- | Specially designed buckets are available for 100 ml glass tubes to analyze oil, milk fat, toxic components, impurities, etc.



# 1096R

## Large Capacity, High-Speed Centrifuge

### Technical Specifications

Max. RPM/RCF	Fixed angle	10,000 / 14,981 xg	Parameters on display window	RPM (RCF), Oper Status, Lid Open / Close, Hr:Min, Temp, ACC, DEC
	Swing-out	5,000 / 5,324 xg		
Max. capacity	Fixed angle	6 x 500 ml	Display	Blue LCD
	Swing-out	4 x 1,400 ml, 6 x 750 ml, 4 FTPs	Automatic rotor identification	Yes
Temp. range (°C)		-10 to +40	Imbalance cut-off	Yes
FAST cool button		Yes	Safety lid lock	Yes
Time control		Pulse, timed < 10 hr or continuous	Lid drop protection	Yes
Time counting modes		Selectable, at set speed or from starting	Motorized lid open & close	Yes
RPM/RCF conversion		Yes	Power supply (V/Hz)	220 / 50~60 (110V optional)
Noise level (dB)		≤ 56	Power requirement (kVA)	3.0
ACC/DEC		9/10 steps	Dimension (W x D x H, mm)	643 x 762 x 850
Program memory		100	Weight without rotor (kg)	180
			Cat. No.	GZ-1096R

### Rotors Overview

<p><b>GRS-L-1400-4W</b> <b>GLB-1400-1400</b></p>  <p>4 blood bags 4,000/3,982 xg</p>	<p><b>GRS-L-mw-4W</b> <b>GLP-mw-1400</b></p>  <p>4 x 4 MTPs 5,000/5,324 xg</p>	<p><b>GRS-L-750-6</b></p> <p><b>GLB-750-750</b>    <b>GLB-500-750</b>    <b>GLB-mw-750</b></p>  <p>6 x 250 ml    6 x 500 ml    6 x 4 MTPs 4,000/3,982 xg    4,000/4,248 xg    4,000/3,384 xg</p>				
<p><b>GRS-L-750-4</b></p> <p><b>GLB-750-750</b>    <b>GLB-b750-750</b>    <b>GLB-500-750</b>    <b>GLP-mw-750</b></p>  <p>4 x 250 ml    4 x 250 ml    4 x 500 ml    4 x 4 MTP 4,000/3,667 xg    4,000/3,667 xg    4,000/3,900 xg    4,000/3,068 xg</p>				<p><b>GRS-L-r750-4</b></p> <p><b>GLB-r750-r750</b>    <b>GLB-500-r750</b>    <b>GLP-mw-r750</b></p>  <p>4 x 250 ml    4 x 500 ml    4 x 4 MTP 3,600/2,898 xg    3,600/3,159 xg    3,600/2,485 xg</p>		
<p><b>GRS-L-r250-4</b></p> <p><b>GLB-r250-r250</b>    <b>GLP-mw-r250</b>    <b>GLB-100(L)-r250</b>    <b>GLB-100(S)-r250</b>    <b>GLB-100(C)-r250</b></p>  <p>4 x 250 ml    4 x 4 MTPs    4 x 100 ml    4 x 100 ml    4 x 100 ml 4,000/3,134 xg    4,000/2,737 xg    4,000/4,358 xg    4,000/4,155 xg    4,000/4,191 xg</p>					<p><b>GRF-L-500-6</b></p>  <p>6 x 500 ml 8,000/11,305 xg</p>	<p><b>GRF-L-250-6</b></p>  <p>6 x (250 &amp; 15 ml) 10,000/14,981 xg (15 ml: 14,679 xg)</p>

Large Capacity, High-Speed Centrifuge

1096R

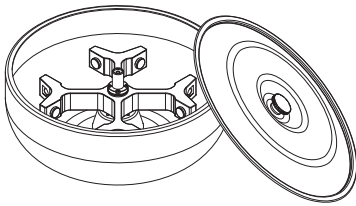


# 1096R

## Large Capacity, High-Speed Centrifuge

### Swing-Out Rotor, GRS-L-1400-4W

- 4 loadings
- ∠ 90°
- Include windshield set



Oval Bucket  
**GLB-1400-1400**  
 Bucket bore (w x d x h, mm)  
 134 x 115 x 135  
 Radius (mm) : 222.6  
 Max. RPM : 4,000  
 Max. RCF (g-force) : 3,982 xg  
 Max. height for tube fit (mm) : 150

Tube					
Tube capacity (ml)	400	200	50 ml conical	50	15
Tube Rack					
Cat. No.	<b>GAM-400-2(1400)</b>	<b>GAM-200-3(1400)</b>	<b>GAM-c50-9(1400)</b>	<b>GAM-50-12(1400)</b>	<b>GAM-15-24(1400)</b>
Hole dimension (Φx L, mm)	104 x 58 x 135	104 x 39 x 135	29.5 x 100	29 x 93	17.2 x 100
Rack capacity (ea/4)	2/8	1/4	9/36	12/48	24/96
Radius (mm)	222.6	222.6	187.6	180.6	197.6
Max. RPM	4,000				
Max. RCF (g-force)	3,982	3,982	3,356	3,231	3,535

### Swing-Out Rotor, GRS-L-mw-4W

- 4 loadings
- ∠ 90°
- Include windshield set

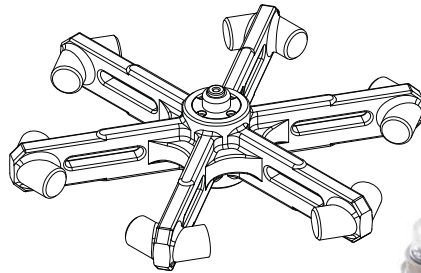


Microplate Holder  
**GLP-mw-1400**  
 Bucket bore (w x d x h, mm)  
 88 x 128 x 57  
 Radius (mm) : 190.5  
 Max. RPM : 5,000  
 Max. RCF (g-force) : 5,324 xg

Plate			
Plate capacity (ml)	MTP	DWP	Filter Plate
Holder capacity (ea/4)	4/16	1/4	1/4

**Swing-Out Rotor, GRS-L-750-6**

4 loadings  
 ∟ 90°



750 ml Round Bucket GLB-750-750  
 Bucket bore (Øx L, mm) : 99 x 101.5  
 Radius (mm) : 222.6  
 Max. RPM : 4,000  
 Max. RCF : 3,982 xg  
 Max. height for tube fit (mm) : 142

Tube											
Tube capacity (ml)	3	5	10	15	15 ml conical	50	50 ml conical	250	c250	c500	750
Tube rack											None
Cat. No.	GAM-5-24(750)		GAM-10-21(750)	GAM-15-19(750)	GAM-c15-14(750)	GAM-50-7(750)	GAM-c50-5(750)	GAS-250(750)	GAS-c250(750)	GAS-500(750)	-
Rack capacity (ea/4)	24/144		21/126	19/114	14/84	7/42	5/30	1/6	1/6	1/6	1/6
Hole dimension (Øx L, mm)	13.2 x 58	13.2 x 85	16 x 85	17.2 x 85	17 x 85	29.2 x 87	29.2 x 88	62.3 x 87	60.5 x 125	95.6 x 58	-



500 ml Round Bucket  
 GLB-500-750  
 Bucket bore (Øx L, mm) : 69.2 x 135  
 Radius (mm) : 237.5  
 Max. RPM : 4,000  
 Max. RCF : 4,248 xg  
 Max. height for tube fit (mm) : 165

Tube	
Tube capacity (ml)	500
Bucket capacity (ea/4)	1/6



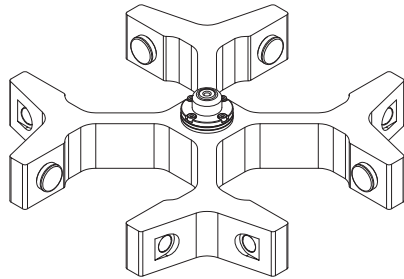
Microplate Holder  
 GLP-mw-750  
 Bucket bore (w x d x h, mm) : 88 x 128.5 x 80  
 Radius (mm) : 171.5  
 Max. RPM : 4,000  
 Max. RCF : 3,384 xg

Plate		
Plate capacity (ml)	MTP	DWP
Holder capacity (ea/6)	4/24	1/6



**Swing-Out Rotor, GRS-L-750-4**

4 loadings  
 ↗ 90°



Bioseal 750 ml Round Bucket <b>GLB-b750-750 / GLB-750-750</b> Bucket bore (Φx L, mm) : 99 x 101.5 Radius (mm) : 205 Max. RPM : 4,000 Max. RCF : 3,667 xg Max. height for tube fit (mm) : 130 (w/ cap) / 142 (w/o cap)
---

Bioseal Bucket with O-ring

\* GLB-b750-750 includes bioseal cap.

Tube											
Tube capacity (ml)	3	5	10	15	15 ml conical	50	50 ml conical	250	250 ml conical	500 ml conical	750
Tube rack											None
Cat. No.	<b>GAM-5-24(750)</b>	<b>GAM-10-21(750)</b>	<b>GAM-15-19(750)</b>	<b>GAM-c15-14(750)</b>	<b>GAM-50-7(750)</b>	<b>GAM-c50-5(750)</b>	<b>GAS-250(750)</b>	<b>GAS-c250(750)</b>	<b>GAS-500(750)</b>	-	-
Rack capacity (ea/4)	24/96	21/84	19/76	14/56	7/28	5/20	1/4	1/4	1/4	1/4	1/4
Hole dimension (Φx L, mm)	13.2 x 58	13.2 x 85	16 x 85	17.2 x 85	17 x 85	29.2 x 87	29.2 x 88	62.3 x 87	60.5 x 125	95.6 x 58	-



500 ml Round Bucket <b>GLB-500-750</b> Bucket bore (Φx L, mm) : 69.2 x 135 Radius (mm) : 218 Max. RPM : 4,000 Max. RCF : 3,900 xg Max. height for tube fit (mm) : 165
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Tube	
Tube capacity (ml)	500
Bucket capacity (ea/4)	1/4



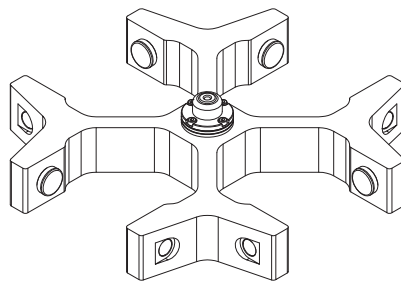
Microplate Holder <b>GLP-mw-750</b> Bucket bore (Φx L, mm) : 88 x 128.5 x 80 Radius (mm) : 171.5 Max. RPM : 4,000 Max. RCF : 3,068 xg
--

Plate		
Plate capacity (ml)	MTP	DWP
Holder capacity (ea/4)	4/16	1/4



**Swing-Out Rotor, GRS-L-r750-4**

4 loadings  
 ↗ 90°



Rectangular 750 ml Bucket  
**GLB-r750-r750**

Bucket bore (w x d x h, mm) :  
 99 x 99 x 98  
 Radius (mm) : 200  
 Max. RPM : 3,600  
 Max. RCF : 2,898 xg  
 Max. height for tube fit (mm) : 135

Tube								
Tube capacity (ml)	3	5	10	15	15 ml conical	50	50 ml conical	250
Tube rack								
Cat. No.	<b>GAM-5-30(r750)</b>		<b>GAM-15-20(r750)</b>		<b>GAM-c15-16(r750)</b>	<b>GAM-50-8(r750)</b>	<b>GAM-c50-5(r750)</b>	<b>GAS-250(r750)</b>
Rack capacity (ea/4)	30/120		20/80		16/64	8/32	5/20	1/4
Hole dimension (ΦxL, mm)	13 x 56.5	13 x 85	17.2 x 85		17.5 x 85	29.5 x 85		62.5 x 87



500 ml Round Bucket  
**GLB-500-r750**

Bucket bore (ΦxL, mm) : 69.2 x 135  
 Radius (mm) : 218  
 Max. RPM : 3,600  
 Max. RCF : 3,159 xg  
 Max. height for tube fit (mm) : 165

Tube	
Tube capacity (ml)	500
Bucket capacity (ea/4)	1/4



Microplate Holder  
**GLP-mw-r750**

Bucket bore (w x d x h, mm)  
 : 88 x 128.5 x 80  
 Radius (mm) : 171.5  
 Max. RPM : 3,600  
 Max. RCF : 2,485 xg

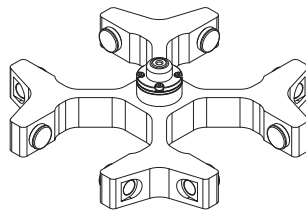
Plate		
Plate capacity (ml)	MTP	DWP
Holder capacity (ea/4)	4/16	1/4

# 1096R

## Large Capacity, High-Speed Centrifuge

### Swing-Out Rotor, GRS-L-r250-4

4 loadings  
 ∠ 90°



#### Rectangular 250 ml Bucket GLB-r250-r250

Bucket bore (w x d x h, mm)  
 : 86 x 70.3 x 102.5  
 Radius (mm) : 175.2  
 Max. RPM : 4,000  
 Max. RCF : 3,134 xg  
 Max. height for tube fit (mm) : 130

Tube										
Tube capacity (ml)	3	5	10	15	15 ml conical	50	50 ml conical	15	85	250
Tube rack										
Cat. No.	GAM-5-12(r250)		GAM-15-12(r250)		GAM-c15-9(r250)	GAM-50-4(r250)	GAM-c50-3(r250)	GAM-85-2(r250)		GAS-250(r250)
Rack capacity (ea/4)	12/48		12/48		9/36	4/16	3/12	2/8		1/4
Hole dimension (Φ x L, mm)	13.5 x 58	13.5 x 80	17.5 x 90		17.5 x 90	30.2 x 90	30.5 x 90	17 x 86.5	38.5 x 86.5	62.5 x 87



#### Microplate Holder GLP-mw-r250

Bucket bore (w x d x h, mm)  
 : 88 x 128.5 x 80  
 Radius (mm) : 153  
 Max. RPM : 4,000  
 Max. RCF : 2,737 xg

Plate		
Plate capacity (ml)	MTP	DWP
Holder capacity (ea/4)	4/16	1/4



#### 100 ml Bucket GLB-100(L)-r250

Bucket bore (Φ x L, mm) : 35.5 x 180.6  
 Radius (mm) : 243.6  
 Max. RPM : 4,000  
 Max. RCF (g-force) : 4,358  
 Max. height for tube fit (mm) : 207

Glass	
Glass capacity (ml)	100



#### 100 ml Bucket GLB-100(S)-r250

Bucket bore (Φ x L, mm) : 44.6 x 143.3  
 Radius (mm) : 232.3  
 Max. RPM : 4,000  
 Max. RCF (g-force) : 4,155  
 Max. height for tube fit (mm) : 190

Glass	
Glass capacity (ml)	100




#### 100 ml Bucket GLB-100(C)-r250

Bucket bore (Φ x L, mm) : 61.5 x 145.3  
 Radius (mm) : 234.3  
 Max. RPM : 4,000  
 Max. RCF (g-force) : 4,191  
 Max. height for tube fit (mm) : 190

Glass	
Glass capacity (ml)	100

**Fixed Angle Rotor, GRF-L-500-6**



6 x 500 ml  
 ∠ 25°  
 Hole diameter (mm) : 70  
 Max. height for tube fit (mm) : 170

Tube	
Tube capacity (ml)	500
Radius (mm)	158
Max. RPM	8,000
Max. RCF (g-force)	11,305



**Fixed Angle Rotor, GRF-L-250-6**

6 x (250 & 15 ml)  
 ∠ 25°  
 Hole diameter (250/15) (mm) : 62/17  
 Max. height for tube fit (250/15) (mm) : 130/120

Tube		
Tube capacity (ml)	15	250
Radius (mm)	131.3	134
Max. RPM	10,000	
Max. RCF (g-force)	14,679	14,981



406

Clinical, Low-Speed Centrifuge

# 406

Clinical, Low-Speed Centrifuge



- | Compact and robust small centrifuge 406 is ideal for routine low-speed centrifugation.
- | Commonly used in the fractionation of blood samples and simple precipitation of biological samples
- | Automatic lid release and vivid end alarm for easy retrieval of samples
- | Supplied with an angle rotor including 6 of aluminum sleeves for 15 ml tubes
- | CE MDD-certified version also available (inquire)

## | Applications

Routine separation of blood, urine or cells

Technical Specifications

Max. RPM/RCF	4,000 / 2,075 xg	Safety lid lock	Yes
Max. capacity	6 x 15 ml	Lid drop protection	Yes
Time control	Timed < 100 min or continuous	Automatic lid release at completion	Yes
RPM/RCF conversion	Yes	Power supply (V/Hz)	220 / 50~60 (110V optional)
Noise level (dB)	≤ 52	Power requirement (VA)	140
ACC/DEC (sec)	≤ 20 / ≤ 20	Dimension (W x D x H, mm)	296 x 412 x 206
Program memory	10	Weight without rotor (kg)	17.5
Parameters on display window	RPM (RCF), Min (Sec)	CE mark	Yes
Imbalance cut-off	Yes	Cat. No.	GZ-0406

Angle Rotor, **GRA-15-6A**

6 x 15 ml  
 ∠ 45°  
 Hole diameter (mm) : 18  
 Max. height for tube fit (mm) : 125 (120 for conical)



15 ml Sleeve  
**GLB-15A -FA**  
 Sleeve bore (Φx L, mm) : 18 x 97.5  
 Radius (mm) : 116  
 Max. RPM : 4,000  
 Max. RCF : 2,075 xg

Tube						
Tube capacity (ml)	3	4	5	10	15	15 conical
Adaptor				None	None	None
Cat. No.	<b>GAS-3(15)</b>	<b>GAS-4(15)</b>	<b>GAS-5(15)</b>	-	-	-
Adaptor bore (Φx L, mm)	13.5 x 61	13.5 x 65	13.5 x 85	-	-	-
Radius (mm)	95.5	98.5	111	115	116	112
Max. RPM	4,000					
Max. RCF (g-force)	1,703	1,762	1,986	2,057	2,075	2,003

416

Clinical, Low-Speed Centrifuge

# 416

Clinical, Low-Speed Centrifuge



- | The 416, compact bench top centrifuge with maximized capacity of 400 ml
- | Commonly used in the fractionation of blood samples and simple precipitation of biological samples
- | A separate button for "Soft" start/stop function to achieve very gentle acceleration and deceleration
- | Furnished with unique air flow design and anti-vibration structure to minimize heat and noise generation
- | Lid drop protection design allows easiness and safety when loading or unloading samples.
- | Automatic lid release and vivid end alarm for easy retrieval of sample
- | A large assortment of rotors, buckets and adaptors for microtubes and all sizes of tubes up to 100 ml
- | CE MDD-certified version also available (inquire)

## | Applications

- General laboratory applications including sample separations of cellular materials, blood, urine, sperm, etc.
- Clinical applications including PRP, PRF and stem cell isolation
- Low-speed gentle centrifugation of microbead containing microplates
- Gentle and soft spin-down or washing of primary cells and cell lines

Technical Specifications

Max. RPM/RCF	Fixed angle	4,000 / 2,700 xg	Parameters on display window	RPM (RCF), Min (Sec)
	Swing-out	4,000 / 2,826 xg	Imbalance cut-off	Yes
Max. capacity	Fixed angle	16 x 15 ml	Safety lid lock	Yes
	Swing-out	4 x 100 ml, 32 vacutainer tube, 4 MTPs	Lid drop protection	Yes
Time control		Timed < 100 min or continuous	Automatic lid release at completion	Yes
RPM/RCF conversion		Yes	Power supply (V/Hz)	220 / 50~60 (110V optional)
Noise level (dB)		≤ 52	Power requirement (VA)	340
ACC/DEC (sec)		≤ 20 / ≤ 25	Dimension (W x D x H, mm)	375 x 480 x 260
SOFT start/stop		Yes	Weight without rotor (kg)	19.5
Program memory		10	CE mark	Yes
Parameters on display window		RPM (RCF), Min (Sec)	Cat. No.	GZ-0416

Rotors Overview

GRS-S-100-4

<b>GLB-b100-100</b>	<b>GLB-b50-100</b>	<b>GLB-10-8-100</b>	<b>GLB-bd15-100</b>	<b>GLB-bdc15-100</b>
				
4 x 100 ml 4,000/2,774 xg	4 x 50 ml 4,000/2,700 xg	4 x 8 x 10 ml vacutainer 4,000/2,774 xg	4 x 2 x 15 ml 4,000/2,700 xg	4 x 2 x 15 ml conical 4,000/2,774 xg

GRS-S-50-4

<b>GLB-50-50</b>	<b>GLB-c50-50</b>	<b>GLB-15-50</b>	<b>GLB-c15-50</b>	<b>GLB-d15-50</b>	<b>GLB-dc15-50</b>
					
4 x 50 ml 4,000/2,700 xg	4 x 50 ml conical 4,000/2,700 xg	4 x 15 ml 4,000/2,700 xg	4 x 15 ml conical 4,000/2,700 xg	4 x 2 x 15 ml 4,000/2,700 xg	4 x 2 x 15 ml conical 4,000/2,700 xg

GRS-S-15-6

GLB-15-15



6 x 15 ml  
4,000/2,826 xg

GRA-S-15-16A

GLB-15A-FA



16 x 15 ml  
4,000/2,700 xg

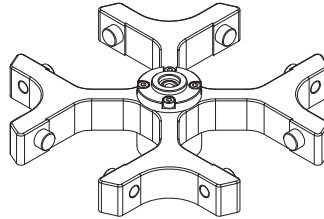
GRS-S-mw-2



2 x MTP  
4,000/1,986 xg

**Swing-Out Rotor, GRS-S-100-4**

4 loadings  
 ↗ 90°



Bioseal Bucket with O-ring

**Bioseal 100 ml Bucket  
 GLB-b100-100**

Bucket bore (Φx L, mm) : 47 x 99  
 Radius (mm) : 155.1  
 Max. RPM : 4,000  
 Max. RCF : 2,774 xg  
 Max. height for tube fit (mm)  
 : 120 (w/ cap) / 130 (w/o cap)

Tube										
Tube capacity (ml)	1.5~2.0	2.6~7	4~10	9~15	15 ml conical	15 ml conical	50	50 ml conical	85	100
Tube rack										
Cat. No.	<b>GAM-m2.0-6 (b100)</b>	<b>GAM-7-5 (b100)</b>	<b>GAM-10-5 (b100)</b>	<b>GAM-15-3 (100)</b>	<b>GAM-c15-3 (100)</b>	<b>GAS-c15 (b100)</b>	<b>GAS-50 (b100)</b>	<b>GAS-c50 (b100)</b>	<b>GAS-85 (b100)</b>	<b>GAS-100 (b100)</b>
Rack capacity (ea/6)	6/24	5/20	5/20	3/12	3/12	1/4	1/4	1/4	1/4	1/4
Hole dimension (Φx L, mm)	11 x 39	13.5 x 60	16 x 60	17.5 x 105	17.2 x 106.5	17.2 x 106.5	29.5 x 95.9	30 x 100	38.5 x 106.4	44.2 x 106.4

\* The bioseal cap is compatible with (b100) but not with (100) adaptor.



**Bioseal 50 ml Bucket  
 GLB-b50-100**

Bucket capacity : 1/ea  
 Bucket bore (Φx L, mm) : 30.5 x 97  
 Radius (mm) : 150.9  
 Max. RPM : 4,000  
 Max. RCF : 2,700 xg  
 Max. height for tube fit (mm) : 125 (w/ cap) / 130 (w/o cap)



**Vacuotainer 100 ml Bucket  
 GLB-10-8-100**

Bucket capacity : 8/ea  
 Bucket bore (Φx L, mm) : 16 x 89  
 Radius (mm) : 155.1  
 Max. RPM : 4,000  
 Max. RCF : 2,774 xg  
 Max. height for tube fit (mm) : 120



**Bioseal Dual 15 ml Round Bucket  
 GLB-bd15-100**

Bucket capacity : 2/ea  
 Bucket bore (Φx L, mm) : 17 x 98  
 Radius (mm) : 150.9  
 Max. RPM : 4,000  
 Max. RCF : 2,700 xg  
 Max. height for tube fit (mm) : 115



**Bioseal Dual 15 ml Conical Bucket  
 GLB-bdc15-100**

Bucket capacity : 2/ea  
 Bucket bore (Φx L, mm) : 17 x 102.5  
 Radius (mm) : 155.1  
 Max. RPM : 4,000  
 Max. RCF : 2,774 xg  
 Max. height for tube fit (mm) : 120

Tube				
Tube capacity (ml)	15	15 ml conical	50 ml conical	50
Adaptor			None	
Cat. No.	<b>GAS-u15(50)</b>	<b>GAS-c50(50)</b>	-	
Adaptor bore (Φx L, mm)	18.5 x 100	29.5 x 17.5	-	

Tube	
Tube capacity (ml)	10
Bucket capacity (ea/4)	8/32

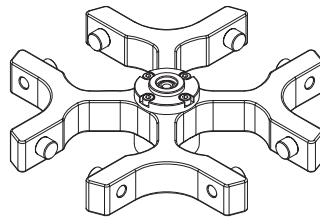
Tube	
Tube capacity (ml)	15
Bucket capacity (ea/4)	2/8

Tube	
Tube capacity (ml)	15 ml conical
Bucket capacity (ea/4)	2/8



**Swing-Out Rotor, GRS-S-50-4**

4 loadings  
 ↗ 90°



<b>50 ml Round Bucket GLB-50-50</b>
Bucket capacity : 1/ea
Bucket bore (Φx L, mm) : 30.5 x 91
Radius (mm) : 150.9
Max. RPM : 4,000
Max. RCF : 2,700 xg
Max. height for tube fit (mm) : 125



<b>15 ml Conical Bucket GLB-c50-50</b>
Bucket capacity : 1/ea
Bucket bore (Φx L, mm) : 29.5 x 91.5
Radius (mm) : 150.9
Max. RPM : 4,000
Max. RCF : 2,700 xg
Max. height for tube fit (mm) : 125

Tube				
Tube capacity (ml)	15	15 ml conical	50 ml conical	50
Adaptor				None
Cat. No.	<b>GAS-u15(50)</b>	<b>GAS-c50(50)</b>	-	-
Adaptor bore (Φx L, mm)	17.3 x 87	29.5 x 17.5	-	-

Tube	
Tube capacity (ml)	50 ml conical
Bucket capacity (ea/4)	1/4



<b>15 ml Round Bucket GLB-15-50</b>
Bucket capacity : 1/ea
Bucket bore (Φx L, mm) : 17 x 93
Radius (mm) : 150.9
Max. RPM : 4,000
Max. RCF : 2,700 xg
Max. height for tube fit (mm) : 125

Tube	
Tube capacity (ml)	15
Bucket capacity (ea/4)	1/4



<b>15 ml Conical Bucket GLB-c15-50</b>
Bucket capacity : 1/ea
Bucket bore (Φx L, mm) : 17 x 93
Radius (mm) : 150.9
Max. RPM : 4,000
Max. RCF : 2,700 xg
Max. height for tube fit (mm) : 120

Tube	
Tube capacity (ml)	15 ml conical
Bucket capacity (ea/4)	1/4



<b>Dual 15 ml Round Bucket GLB-d15-50</b>
Bucket capacity : 2/ea
Bucket bore (Φx L, mm) : 17 x 91.5
Radius (mm) : 150.9
Max. RPM : 4,000
Max. RCF : 2,700 xg
Max. height for tube fit (mm) : 120

Tube	
Tube capacity (ml)	15
Bucket capacity (ea/4)	2/8



<b>Dual 15 ml Conical Bucket GLB-dc15-50</b>
Bucket capacity : 2/ea
Bucket bore (Φx L, mm) : 17 x 91.5
Radius (mm) : 150.9
Max. RPM : 4,000
Max. RCF : 2,700 xg
Max. height for tube fit (mm) : 120

Tube	
Tube capacity (ml)	15 ml conical
Bucket capacity (ea/4)	2/8

**Swing-Out Rotor, GRS-S-15-6**

6 loadings  
 ⊥ 90°



15 ml Bucket <b>GLB-15-15</b> Bucket capacity : 1/ea Bucket bore (Φx L, mm) : 17 x 93.8 Radius (mm) : 158 Max. RPM : 4,000 Max. RCF : 2,826 xg Max. height for tube fit (mm) : 125	Tube			
	Tube capacity (ml)	10	15	15 ml conical
	Bucket capacity (ea/6)	1/6	1/6	1/6

**Angle Rotor, GRA-S-15-16A**

16 x 15 ml  
 ⊥ 45°  
 Hole diameter (mm) : 18  
 Max. height for tube fit (mm) : 125 (120 for conical)



15 ml Sleeve <b>GLB-15A-FA</b> Sleeve bore (Φx L, mm) : 18 x 97.5 Radius (mm) : 150.9 Max. RPM : 4,000 Max. RCF : 2,700 xg	Tube						
	Tube capacity (ml)	3	4	5	10	15	15 ml conical
	Adaptor				None	None	None
	Cat. No.	<b>GAS-3(15)</b>	<b>GAS-4(15)</b>	<b>GAS-5(15)</b>	-	-	-
	Adaptor bore (Φx L, mm)	13.5 x 61	13.5 x 65	13.5 x 85	-	-	-
	Radius (mm)	134	136	146	150.5	150.9	147.5
	Max. RPM	4,000					
	Max. RCF (g-force)	2,397	2,433	2,612	2,692	2,700	2,638


**Swing-Out Rotor, GRS-S-mw-2**

2 loadings

└ 90°

Area dimension (mm) : 88.5 x 130.3

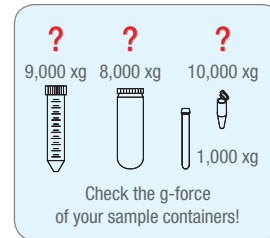
Max. height for microplate fit (mm) : 35

Plate	
Plate capacity (ml)	MTP
Holder capacity (ea/2)	2/4
Radius (mm)	111
Max. RPM	4,000
Max. RCF (g-force)	1,986

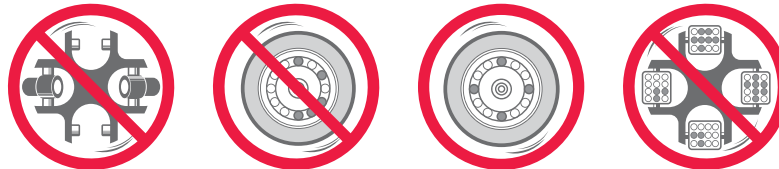


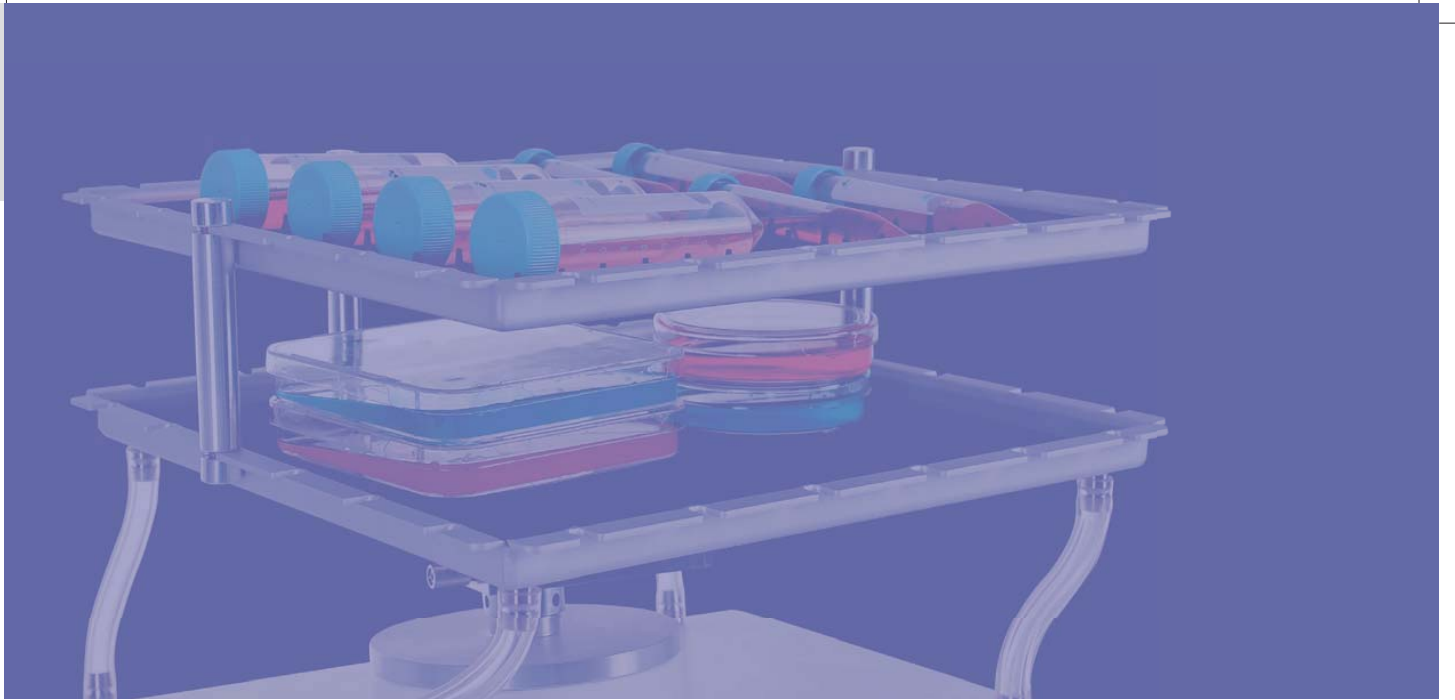
### Centrifugation SAFETY

- | Before using centrifuge, the operation manual should be read carefully to ensure correct usage. Incorrect handling of centrifuges may possibly result in personal injury or physical damage on the unit or its accessories.
- | Should not use a power source other than the instrument designed to operate on.
- | Should not use unapproved rotors or any incompatible components.
- | Should operate the instrument with a rotor properly installed and secured to the motor shaft.
- | ALWAYS locate the instrument on a flat, level, rigid and stable floor capable of withstanding weight of the instrument and vibration.
- | ALWAYS mark a safety zone of 30 cm around the centrifuge to secure persons from any unexpected dangerous circumstances during operation, as safety regulations required.
- | ALWAYS keep free space on each side of the instrument to ensure proper ventilation.
- | ALWAYS install the instrument in a temperature and humidity controlled environment. (Permissible ambient temperature: +5 ~ +35°C, relative humidity : ≤ 85 %)
- | Should not centrifuge flammable, toxic, radioactive, explosive or corrosive materials.
- | Should not exceed the speed or specific gravity allowed. To run samples with greater cleaning than 1.2 g/ml, the maximum rotational speed should be lowered to avoid rotor failure.
- | ALWAYS load the rotor symmetrically with evenly weighted samples to avoid rotor imbalance. If necessary, use the water blank to counterbalance the unbalanced sample.
- | The rotors should be cleaned and kept dry after usage to increase the lifespan.
- | ALWAYS disconnect the power supply prior to maintenance and technical service to avoid electrical shock. Do not immerse.
- | ALWAYS use verified disinfection procedures when centrifuging biohazardous materials.



### Correct Way of Sample Balancing





# Laboratory Shakers

LaboShakers ..... 69

GYROZEN®

D600

LaboShaker

## LABOSHAKER D600

### 3D motion shaker ideal for gentle and effective mixing

The LaboShaker D600 has an elegant simple design, whose motion is smooth, undulating figure of 8-cycling. The unique pattern of the motion promotes optimal movement required for the multiple “staining” and “washing” procedures that are involved in gel staining and blotting. This shaker with its 3-dimensional action provides gentle agitation which is more effective than that of traditional orbital shakers. Its horizontal and vertical movement enables more rapid staining and de staining of gels.

Adjustable speed and pitch allow fine motion controls.

The “LaboShaker D600” creates a continuous figure of 8-motion by means of a platform supported by 4 undulating flexible pillars anchored at each corner. This type of agitation helps a more thorough mixing and even distribution of the suspension.

- | 30 x 30 cm platform with an “anti-slip” robust shaker
- | Max. load 3 kg
- | Adjustable up to 140 rpm with tilting up to 15°
- | Supplied with extra set of silicon pillar
- | Optional non-slip spiked mats for 50 ml and 15 ml tubes
- | Optional rubber bands for fixing containers

#### | Applications

- Gel staining and destaining
- Western blot and membrane washing
- Any type of ELISA reactions
- From simple mixing to catalytic reactions



\* Not available in the USA.



Manual adjustment of rotational angle



Strong and robust silicon pillar



Fastening rubber band tied through the platform edge holes



Regularly spaced spike embossing for securing 50 ml and 15 ml tubes

### Technical Specifications

Speed range (RPM)	0~140
Shaking angle (°)	0~15
Max. load (kg)	3.0
Platform area (W x D, mm)	295 x 295
Mains voltage (V)	220
Mains frequency (Hz)	50/60
Power consumption (VA)	30
Dimensions (W x D x H, mm)	360 x 360 x 257
Time control	99 (h) : 59 (m) : 59 (s), continuous
Weight (kg)	8.2

### Ordering Information

Cat. No.	Product	Specification
GS-D600	LaboShaker D600 including Basic Plain Mat and Additional Set of Silicon Pillar	220V, 50/60Hz
GSA-DS-M1	Basic Plain Rubber Mat of D600	294.5 x 294.5 x 3t
GSA-DS-M2	Non-Slip Spiked Rubber Mat of D600	294.5 x 294.5 x 10
GSA-DS-B	Rubber Band Set for Fixing Tubes on the D600 (2ea/set)	Φ162 x 2.62t
GSA-DS-P	Silicon Pillar Set (4ea)	
GSA-DS-P2	Additional Platform for D600 (incl. three Stacking Supports and one Basic Plain Rubber Mat)	294.5 x 294.5
GSA-DS-P6	Stacking Support for D600 (1 each)	

R100

LaboShaker

## LABOSHAKER R100

### Seesaw type Shaker for mild agitation and mixing

The laboratory shaker, LaboShaker R100 assures gentle mixing of liquids through its seesaw motion. The LaboShaker R100 with 27 x 18 cm compact platform accommodates four microwell plates and is optimized for antigen-antibody reaction, washing procedure, gel staining and destaining. The digital control with the display of SET, RUN and remaining TIME enables exact time control.

- | 27 x 18 cm platform with an "anti-slip" robust shaker
- | Max. load 2 kg
- | Adjustable up to 60 rpm
- | Time control of < 100 hr or continuous
- | Digital display of SET, RUN and remaining TIME
- | Optional non-slip spiked mats for 50 ml and 15 ml tubes
- | Optional rubber bands for fixing containers

### | Applications

- Gel staining and destaining
- Western blot and membrane washing
- Any type of ELISA reactions
- From simple mixing to catalytic reactions







### Technical Specifications

Speed range (RPM)	0~60
Tilt angle (°)	±11
Max. load (kg)	2.0
Platform area (W x D, mm)	270 x 176
Mains voltage (V)	220
Mains frequency (Hz)	50/60
Power consumption (VA)	30
Dimensions (W x D x H, mm)	300 x 250 x 154
Time control	99 (h) : 59 (m) : 59 (s), continuous
Weight (kg)	5.8

### Ordering Information

Cat. No.	Product	Specification
GS-R100	LaboShaker R100 including Basic Plain Mat	220V, 50/60Hz
GSA-R1-M1	Basic Plain Rubber Mat of R100	270 x 176 x 3t
GSA-R1-M2	Non-Slip Spiked Rubber Mat of R100	270 x 176 x 10
GSA-R1-B	Rubber Band Set for Fixing Tubes on the R100(A Large & A Small Set)	Φ120 x 2.62t Φ158 x 2.62t
GSA-R1-P2	Additional Platform for R100 (incl. three Stacking Support and one Basic Plain Rubber Mat)	294.5 x 294.5
GSA-R1-P6	Stacking Support for R100 (1 each)	

MEMO

MEMO

Distribution

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