

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	Power supply (V/Hz)	220/50~60 (110V optional)
OS / Control Display		Windows CE / 7" touch screen	Power requirement (kVA)	4.0
RPM/RCF conversion		Yes	Dimension (W x D x H, mm)	824 x 634 x 1,049
Noise level (dB)		≤ 56	Weight without rotor (kg)	240
ACC/DEC		9/10 steps	CE mark	Yes
Program memory		100	Cat. No.	GZ-2236R

Rotors Overview

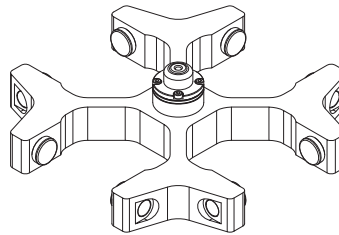
GRS-L-r250-4 GLB-r250-r250 GLP-mw-r250   4 x 250 ml 4,000/3,134 xg 4 x 4 MTPs 4,000/2,737 xg		GRF-L-1000-6  6 x 1,000 ml 7,000/10,825 xg	GRF-L-1000-4  4 x 1,000 ml 8,000/12,071 xg	GRF-L-500-6  6 x 500 ml 10,000/17,664 xg	GRF-L-250-6  6 x (250 & 15 ml) 13,000/25,318 xg (15 ml: 24,808 xg)	GRF-L-85-6  6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

Intuitive Control Interfaces



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


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



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



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)	92.5	93.5	96	103
Max. RPM	20,000			
Max. RCF (g-force)	41,366	41,813	42,931	46,062

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.	GAS-m0.2(2)	GAS-m0.5(2)	-
Adaptor bore (Φx 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)	