

Large Capacity, High Speed Centrifuges

 2236R



| Applications

- Ideal for all kinds of basic and analytical experiments from simple precipitation and separation to filtering, concentration, precipitations, density gradient separation, etc.
- Support diverse applications of clinical, industrial, academic, and scientific separation needs

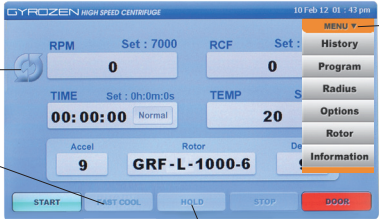
- | Max. 22,000 rpm(54,100 xg) with 6 x 50 ml tubes, 8,000 rpm (12,000 xg) with 4 x 1,000ml tubes
- | Max. capacity of 6x 1,000 ml with fixed angle rotor & 4 x 250 ml (48 x 15 ml) with swing-out rotor
- | 7" LCD touchscreen with intuitive Window based control for easy editing and programming
- | More optimized operation feasible by varied programming capability
- | User ID and protocol management facility with historical tracking
- | Hold or change control of time and temperature whilst running
- | Quiet operation with patented vibration minimizing damper structure
- | Strong, triple laminated ABS/Steel door with auto-lock function
- | Automatic recognition and alarms for imbalance, over-speed, and over-heat
- | High capacity, strong compressor ensures fast cooling of chamber and samples
- | Lowest temperature of -20°C with Fast cool down function to reach 4°C within 5 minutes
- | Time setting to 99 hour 59 min 59 sec or continuous
- | 9 acceleration and 10 deceleration ramps
- | Program memory for up to 100 programs
- | Mounted on lockable and leveling castors
- | A variety of rotors and multi-tube adaptors available

GYROZEN

Rotors Overview

GRF-L-m2.0-24  24 x 2.0 mL 22,000/45,616	GRF-L-m2.0-30  30 x 2.0 mL 18,000/34,919	GRF-L-50-6  6 x 50 mL 22,000/54,111	GRF-L-c50-6  6 x 50 mL conical 17,000/31,793	GRF-L-50-8  8 x 50 mL 20,000/46,062		
GRF-L-85-6  6 x 85 mL 20,000/44,496	GRF-L-250-6  6 x (250&15 mL) 12,000/22,442(15 mL : 21,138)	GRF-L-500-6  6 x 500 mL 9,000/14,308	GRF-L-1000-4  4 x 1,000 mL 8,000/12,071	GRF-L-1000-6  6 x 1,000 mL 7,000/10,825	GRS-L-r250-4   4 x 250 mL 4,000/3,134	GRS-L-r250-4 4 x 4 MTPS 4,000/2,737

Advanced Controls of 2236R





Icon for showing operational status

Fast Cool key for precooling


Hold key for pause or modification of time and temperature parameters

The 7" LCD main display screen of the control panel shows both the set parameters and the actual run conditions. The main display screen also includes the buttons to control the operation. To make selection, tap on the desired field with fingertip on the touchscreen, and then a new display screen opens to make additional selections or show further options or information.

Time Counting Methods

With the **Normal** time count method, the time display begins to count the run time when the acceleration begins and stops when the deceleration begins (t0 – t2). With the **Section** time count method, the time display begins to count the run time once the actual run speed reaches to the set speed value and stops when the deceleration begins (t1 – t2).



Programming of Combined Protocols

With the **Shift** Programming function, up to ten sets of operating parameters can be linked together in a program memory and operate sequentially as a single run. This function is useful in density gradient centrifugation or complex cell separation.


Technical Specifications

Max. RPM/RCF (Swing)	22,000/54,111 xg (4,000/3,134 xg)	
Capacity	Fixed angle	6 x 1,000 mL
	Swing out	4 x 250 mL
Temp. Range (°C)	-20~+40	
FAST COOL button	Yes	
OS / Control Display	Windows CE / 7" Touch Screen	
Time control	Timed < 100 hr or continuous	
RPM/RCF conversion	Yes	
Noise level (dB)	≤ 56	
Acc/Dec	9/10 steps	

Program memory	100
Rotor identification	Automation
Imbalance cut off	Yes
Safety lid lock	Yes
Lid drop protection	Yes
Power supply (V/Hz)	220/50-60 (100V optional)
Power requirement (KVA)	4.0
Dimension (W x D x H, mm)	824 x 634 x 1,049
Weight without rotor (Kg)	240
Cat. No.	GZ-2236R

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


6 x 1,000 mL
 \sphericalangle 25°
 Hole diameter (mm) : 97
 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



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


4 x 1,000 mL
 \sphericalangle 25°
 Hole diameter (mm) : 97
 Max height for tube fit (mm) : 172

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



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



6 x 500 mL
 \sphericalangle 25°
 Hole diameter (mm) : 70
 Max height for tube fit (mm) : 167

Tube	
Tube capacity(mL)	500
Radius(mm)	158
Max. RPM	9,000
Max. RCF(g-force)	14,308



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

6 x (250&15 mL)
 \sphericalangle 25°
 Hole diameter (250/15)(mm) : 62/17
 Max height for tube fit (250/15)(mm) : 125/110

Tube		
Tube capacity(mL)	15	250
Radius(mm)	131.3	134
Max. RPM	12,000	
Max. RCF(g-force)	21,138	22,442



Autoclavable
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	29.9 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

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

6 x 50 mL
 ∠ 30°
 Hole diameter (mm) : 29.5
 Max height for tube fit (mm) : 107
 Supplied with aerosol tight O-ring



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

8 x 50 mL
 ∠ 30°
 Hole diameter (mm) : 29.5
 Max height for tube fit (mm) : 122
 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) [6/8]	89.5/92.5	90.5/93.5	93/96	100/103
Max. RPM [6/8]	22,000/20,000			
Max. RCF(g-force) [6/8]	- / 41,366	- / 41,813	- / 42,931	54,111 / 46,062

Autoclavable
Fixed Angle Rotor, **GRF-L-c50-6**

6 x 50 mL conical
 ∠ 25°
 Hole diameter (mm) : 29.5
 Max height for tube fit (mm) : 142
 Supplied with aerosol tight O-ring



Tube	
Tube capacity(mL)	50 mL conical
Radius(mm)	98.4
Max. RPM	17,000
Max. RCF(g-force)	31,793

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






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



Autoclavable
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) : 56
 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) [24/30]	67/79	73/86	84.3/96.4
Max. RPM [24/30]	22,000/18,000		
Max. RCF(g-force) [24/30]	36,255/28,616	39,501/31,152	45,616/34,919

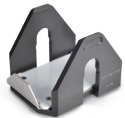
Swing Rotor, GRS-L-r250-4

4 loadings
 ↻ 90°



Rectangular 250 mL Bucket GLB-r250-r250
Bucket bore (wxdxh, mm) : 86 x 70.3 x 98.5
Radius(mm) : 175.2
Max. RPM : 4,000
Max. RCF(g-force) : 3,134
Max height for tube fit(mm) : 125

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 90	38.5 x 90	62.5 x 87



Microplate Holder GLP-mw-r250
Holder dimension (wxdxh, mm) : 88 x 128.5 x 80
Radius(mm) : 153
Max. RPM : 4,000
Max. RCF(g-force) : 2,737

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