Designed to perfectly meet your needs.

THE BEST FUNCTIONAL QUALITY
- Soft touch buttons and display 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 window 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
- Any rotors, sample containers and adaptors can be customized upon specified requirement
- High flexibility of structural & functional modifications
- Accredited with ISO 9001, ISO 13485, and KGMP
- Comply with CE conformity
- Approved as Class IIa medical devices (MD406 and MD416 only)

Wide range of modern centrifuges for a variety of laboratory applications

CONVENIENCE IN OPERATION
- Manufactured and tested to IEC standards, stable spinning operation within +/-1% variation
- Sturdy and soft-demineralization 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
- Free control of time counting by selection of “at set speed” or from starting

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 30-sec release for power blackout or sudden stoppage
- The eco-friendly compression-off function on when lid is open
- The aerosol tight buckets and rotors to prevent contamination
- Autoclavable and corrosion-free rotors
- Manufactured and tested to IEC standards, stable spinning operation within +/-1% variation

EASY CUSTOMIZATION
- Accredited with ISO 9001, ISO 13485, and KGMP
- Comply with CE conformity
- Approved as Class IIa medical devices (MD406 and MD416 only)
- Any rotors, sample containers and adaptors can be customized upon specified requirement
- High flexibility of structural & functional modifications
- Accredited with ISO 9001, ISO 13485, and KGMP
- Comply with CE conformity
- Approved as Class IIa medical devices (MD406 and MD416 only)
### Rotor Availability (Micro Centrifuges)

<table>
<thead>
<tr>
<th>Micro Centrifuges</th>
<th>Fixed Angle Rotor</th>
<th>Swing-Out Rotor</th>
<th>Refrigerated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotor Availability (Micro Centrifuges)</td>
<td>Fixed Angle Rotor</td>
<td>Swing-Out Rotor</td>
<td>Refrigerated</td>
</tr>
</tbody>
</table>

- 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.

### Product Selection Guide by Max Speed & Sample Container

#### Centrifuges

<table>
<thead>
<tr>
<th>Micro Centrifuges</th>
<th>Multi-Purpose, High-Speed Centrifuges</th>
<th>Low-Speed, Clinical Centrifuges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Capacity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32 x 0.2 ml</td>
<td>10 x 1.8 ml cryotube</td>
<td>12 x 2.0 ml</td>
</tr>
<tr>
<td>Max. RPM/RCF</td>
<td>6,000/1,554 (1 row), 1,850 (2 row)</td>
<td></td>
</tr>
<tr>
<td>Hole Diameter (mm)</td>
<td>6.5</td>
<td>11.1</td>
</tr>
<tr>
<td>Max. Height for Tube fit (mm)</td>
<td>16</td>
<td>50</td>
</tr>
</tbody>
</table>

#### Rotor Cat. No.

- GRE-s0.2-32
- GRE-m2.0-24
- GRE-m2.0-36
- GRE-m5.0-10
- GRE-M-s0.2-64
- GRE-M-m2.0-18
- GRE-M-m2.0-24
- GRE-M-m2.0-30
- GRE-M-m2.0-12
- GRD-M-m2.0-8
- GRD-M-m2.0-16

#### Bucket Cat. No.

- GLB-m2.0(8)
- GLB-m2.0-4(16)

### Refridgeration

- ●●●●●●●●●

### Max. Force

- Fixed Angle Rotor
  - Max. 2,000 xg
  - Max. 2,700 xg
  - Max. 3,800 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. 3,500 xg
  - Max. 3,600 xg
  - Max. 3,800 xg
  - Max. 4,410 xg
  - Max. 5,300 xg
  - Max. 16,300 xg

### Sample Container / Max. Force

- Micro Tube
  - PCR strip
  - 0.2/0.5 ml
  - 1.5/2.0 ml
- Micro filter tube
- 1.8 ml cryotube
- 5.0 ml
- 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
- 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)

<table>
<thead>
<tr>
<th>Model</th>
<th>Large Capacity</th>
<th>Multi-Purpose</th>
<th>Clinical</th>
</tr>
</thead>
<tbody>
<tr>
<td>107000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>210000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>210001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>702000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>702001</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Capacity, Purpose, Speed**

- **High-Speed**
  - Large Capacity: 12,000/9,434 (inner), 10,803 (outer)
  - Multi-Purpose: 22,000/52,163
  - Clinical: 12,000/16,520

- **Medium-Speed**
  - Large Capacity: 4,000/3,134
  - Multi-Purpose: 8,000/12,071
  - Clinical: 4,000/3,667

- **Low-Speed**
  - Large Capacity: 15,000/25,910
  - Multi-Purpose: 15,000/25,910
  - Clinical: 15,000/25,910

**Max. Capacity**

- Large Capacity: 64 x 0.2 ml, 30 x 2.0 ml, 24 x 15 ml, 12 x 15 ml conical, 8 x 50 ml, 6 x 50 ml conical, 6 x 85 ml, 6 x 100 ml, 6 x 50 ml
- Multi-Purpose: 64 x 0.2 ml, 30 x 2.0 ml, 24 x 15 ml, 24 x 15 ml, 12 x 15 ml conical, 8 x 50 ml, 6 x 50 ml conical, 6 x 85 ml, 6 x 100 ml, 6 x 50 ml
- Clinical: 64 x 0.2 ml, 30 x 2.0 ml, 24 x 15 ml, 24 x 15 ml, 12 x 15 ml conical, 8 x 50 ml, 6 x 50 ml conical, 6 x 85 ml, 6 x 100 ml, 6 x 50 ml

**Hole Diameter (mm)**

- Large Capacity: 11.1, 18, 18, 18, 29.5, 29.5, 17, 17, 30.5, 29.5, 17
- Multi-Purpose: 11.1, 18, 18, 18, 29.5, 29.5, 17, 17, 30.5, 29.5, 17
- Clinical: 11.1, 18, 18, 18, 29.5, 29.5, 17, 17, 30.5, 29.5, 17

**Bucket Cat. No.**

- Large Capacity: 12,000/9,434 (inner), 10,803 (outer)
- Multi-Purpose: 12,000/9,434 (inner), 10,803 (outer)
- Clinical: 12,000/9,434 (inner), 10,803 (outer)

**Max. Height for Tube fit (mm)**

- Large Capacity: 1652, 115125, 125120, 125122, 120115
- Multi-Purpose: 130(250), 120(15)
- Clinical: 130(250), 120(15)

**Hole Diameter (mm)**

- Large Capacity: 6.5, 11.1, 17, 17, 29.5, 29.5, 29.5, 38.3, 62(250), 17(15)
- Multi-Purpose: 6.5, 11.1, 17, 17, 29.5, 29.5, 29.5, 38.3, 62(250), 17(15)
- Clinical: 6.5, 11.1, 17, 17, 29.5, 29.5, 29.5, 38.3, 62(250), 17(15)

**GRS-SR-15-6 GRS-S-50-4 (only for 416)/ GRS-SR-50-4 (only for 624R)**

**Rotor Cat. No.**

- Multi-Purpose: GRF-L-250-6 GRF-L-500-6
- Clinical: GRS-G-100-6 GRS-L-r250-4 GRS-L-r750-4 GRS-L-750-6 GRS-L-1400-4W GRS-L-mw-4W

**Max. Speed**

- Large Capacity: 1580 / 1580R
- Multi-Purpose: 1248R / 1248
- Clinical: 640 / 640R

**Dimensions**

- Large Capacity: 86 x 70.3
- Multi-Purpose: 88 x 128.5
- Clinical: 61.5

**Order & Inquiry**

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- 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.
- Adapters available for smaller tubes, refrigerated models.
### Fixed Angle Rotor Selection Guide by Sample Container

<table>
<thead>
<tr>
<th>Container Type</th>
<th>Max. Capacity (ea)</th>
<th>Max. Height for Tube Fit (mm)</th>
<th>Hole Diameter (mm)</th>
<th>Speed</th>
<th>Max. Rotor (RPM / RCF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microplate, deep-well plate, tissue culture / PCR plate, filter plate (only GLP-mw-1400)</td>
<td>10 ml</td>
<td>8,000 / 8,872</td>
<td>6.5</td>
<td>12,500 / 11,722</td>
<td>1536 (RPM / RCF)</td>
</tr>
<tr>
<td></td>
<td>15 ml</td>
<td>15,000 / 25,910</td>
<td>12.8</td>
<td>22,000 / 25,910</td>
<td>2236R (RPM / RCF)</td>
</tr>
</tbody>
</table>

### Swing-Out Rotor Selection Guide by Sample Container

<table>
<thead>
<tr>
<th>Container Type</th>
<th>Max. Capacity (ea)</th>
<th>Max. Height for Tube Fit (mm)</th>
<th>Hole Diameter (mm)</th>
<th>Speed</th>
<th>Max. Rotor (RPM / RCF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microplate, deep-well plate, tissue culture / PCR plate, filter plate (only GLP-mw-1400)</td>
<td>10 ml</td>
<td>8,000 / 8,872</td>
<td>6.5</td>
<td>12,500 / 11,722</td>
<td>1536 (RPM / RCF)</td>
</tr>
<tr>
<td></td>
<td>15 ml</td>
<td>15,000 / 25,910</td>
<td>12.8</td>
<td>22,000 / 25,910</td>
<td>2236R (RPM / RCF)</td>
</tr>
</tbody>
</table>

- Model available for inside bucket
- For contact bucket
- The fixed angle rotors are supplied with rear safety FSF snap-retainers.
- The swing-out rotors are supplied with rear meters.
- The swing-out rotors may be ordered together with compatible buckets and adapters.
- The costs of the buckets, adapters may be different and changeable without notification.

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# Fast Cooling
Cooling down to 4℃ within 5 minutes

# Motorized Lid Mechanics
Only a gentle touch is sufficient to close and open the lid.

# ACC/DEC Rate Control
Setting run-up (9 steps) / down (10 steps) rates

# Adjustable End Alarm
alerts completion of the operation.

# Automatic Lid Release
at the completion of the operation

# Selectable Time Mode of “At Set Speed”
for counting running time only when reached the set speed

# Up to 100 or 10 Program Memory
for convenient operation of the routine protocols

# Glove-Friendly, Soft Touch Buttons
allows easy setting of running conditions.

# Rotor ID
Automatic rotor identification for safe operation

# A Large Assortment of Rotors, Buckets and Adaptors
support diverse applications doable with one instrument.

# Short Spin (Pulse)
One-touch key for quick spin

# Lid Drop Protection Design
allows operator’s convenience and safety.

# User ID and Password Function
ideal for core laboratory or multi-user environments

# Imbalance Cut-Off
and accompanied warning keep the instrument protected from unsuitable operation.

# Automatic RPM/RCF Conversion
for easy detection of g-value forcing to samples

---

### Catalog Numbering Rule of Centrifuges and Accessories

<table>
<thead>
<tr>
<th>Main Body</th>
<th>Rotors</th>
<th>Buckets</th>
<th>Adaptors &amp; Multi-Tube Racks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Speed</td>
<td>1248</td>
<td>2236 R</td>
<td>416</td>
</tr>
<tr>
<td>in rpm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Featured Functions

- **Fast Cooling**
  - Cooling down to 4℃ within 5 minutes

- **ACC/DEC Rate Control**
  - Setting run-up (9 steps) / down (10 steps) rates

- **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

- **Rotor ID**
  - Automatic rotor identification for safe operation

- **Short Spin (Pulse)**
  - One-touch key for quick spin

- **Lid Drop Protection Design**
  - Allows operator’s convenience and safety

- **User ID and Password Function**
  - Ideal for core laboratory or multi-user environments

- **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

- **Materialized Lid Mechanics**
  - Only a gentle touch is sufficient to close and open the lid

- **Automatic RPM/RCF Conversion**
  - For easy detection of g-value forcing to samples

---

### Catalog Numbering Rule of Centrifuges and Accessories

- **Max. Capacity**
  - For counting running time only when reached the set speed

- **Loaded Bucket or Plate**
  - For counting running time only when reached the set speed

- **Bucket Type and Capacity**
  - For counting running time only when reached the set speed

- **Adaptor for Single-Tube or Multi-Tube**
  - For counting running time only when reached the set speed

- **Max. Capacity**
  - For counting running time only when reached the set speed

---

### Featured Functions

- **Fast Cooling**
  - Cooling down to 4℃ within 5 minutes

- **ACC/DEC Rate Control**
  - Setting run-up (9 steps) / down (10 steps) rates

- **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 settings of running conditions

- **Rotor ID**
  - Automatic rotor identification for safe operation

- **Short Spin (Pulse)**
  - One-touch key for quick spin

- **Lid Drop Protection Design**
  - Allows operator’s convenience and safety

- **User ID and Password Function**
  - Ideal for core laboratory or multi-user environments

- **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

- **Materialized Lid Mechanics**
  - Only a gentle touch is sufficient to close and open the lid

- **Automatic RPM/RCF Conversion**
  - For easy detection of g-value forcing to samples

---

### Catalog Numbering Rule of Centrifuges and Accessories

- **Max. Speed**
  - (x 1,000 rpm)

- **Max. Capacity**
  - (total # of tubes for max. load)

<table>
<thead>
<tr>
<th>Rotors</th>
<th>Buckets</th>
<th>Adaptors &amp; Multi-Tube Racks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type and Capacity of Rotor Hole or Bucket</td>
<td>Type and Capacity of a Single Wing of a Matching Rotor</td>
<td>Type and Capacity of a Single Wing of a Matching Rotor</td>
</tr>
<tr>
<td>M (2.0)</td>
<td>250</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(85)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b750)</td>
</tr>
</tbody>
</table>

---

### Featured Functions

- **Fast Cooling**
  - Cooling down to 4℃ within 5 minutes

- **ACC/DEC Rate Control**
  - Setting run-up (9 steps) / down (10 steps) rates

- **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 settings of running conditions

- **Rotor ID**
  - Automatic rotor identification for safe operation

- **Short Spin (Pulse)**
  - One-touch key for quick spin

- **Lid Drop Protection Design**
  - Allows operator’s convenience and safety

- **User ID and Password Function**
  - Ideal for core laboratory or multi-user environments

- **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

- **Materialized Lid Mechanics**
  - Only a gentle touch is sufficient to close and open the lid

- **Automatic RPM/RCF Conversion**
  - For easy detection of g-value forcing to samples
Large Capacity, High-Speed Centrifuges

1736R
17,000 / 32,310 xg

2236R
22,000 / 54,111 xg

1096R
10,000 / 14,981 xg

* All tubes showed in this catalog are not included in GYROZEN products.
GYROZEN 1736R is a multi-purpose, large capacity and floor-standing centrifuge that can process samples at speeds up to 17,000 rpm (32,310 x g) and so enables efficient centrifugation in research and laboratory experiments. PCR tubes and micro tubes can be run at 12,000 rpm (10,803 x g) and 17,000 rpm (31,147 x g) respectively and up to six of 500 ml capacity can go to 8,000 rpm (11,305 x g). Even though the most common usage of this model comes with fixed angle rotors for high speed, the swing-out rotor with a capacity of four 250 ml extends the flexibility of this multi-purpose centrifuge. 1736R operates very quietly and fits well in a very crowded laboratory with its compact footprint.

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

Features
- 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
- 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 freezing.
- Intuitive control interface with numeric input buttons allow 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.

Specifications

<table>
<thead>
<tr>
<th>Technical Specifications</th>
<th>17,300 / 32,310</th>
<th>Program memory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed angle</td>
<td>17,300 / 32,310</td>
<td>300</td>
</tr>
<tr>
<td>Capacity</td>
<td>6 x 50 ml, 3 x 500 ml</td>
<td>Blue LCD</td>
</tr>
<tr>
<td>Dimensions</td>
<td>6 x 250 ml, 4 x 15 ml, 16 x 16 ml</td>
<td>Yes</td>
</tr>
<tr>
<td>Maximum capacity Fixed angle</td>
<td>20 x 40 ml</td>
<td>Yes</td>
</tr>
<tr>
<td>Maximum capacity Swing-out</td>
<td>20 x 40 ml</td>
<td>Yes</td>
</tr>
<tr>
<td>Temp. range (°C)</td>
<td>-20°C to +40°C</td>
<td>Yes</td>
</tr>
<tr>
<td>FAST cool button</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>RPM/RCF conversion</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Noise level (dB)</td>
<td>~ 60 dB</td>
<td>Yes</td>
</tr>
<tr>
<td>ACC/DEC</td>
<td>9 / 10 steps</td>
<td>Yes</td>
</tr>
<tr>
<td>Control panel</td>
<td>6 Step</td>
<td>Yes</td>
</tr>
<tr>
<td>Parameters on display window</td>
<td>RPM/RCF, Oper Status, Lid Open/Close, Hr:Min, Temp, ACC, DEC</td>
<td>Yes</td>
</tr>
<tr>
<td>Program memory</td>
<td>100</td>
<td>Yes</td>
</tr>
<tr>
<td>Display</td>
<td>Blue LCD</td>
<td>Yes</td>
</tr>
<tr>
<td>Time control</td>
<td>Pulse, timed ≤ 10 hr or continuous</td>
<td>Yes</td>
</tr>
<tr>
<td>Time control</td>
<td>Pulse, timed ≤ 10 hr or continuous</td>
<td>Yes</td>
</tr>
<tr>
<td>Chamber material</td>
<td>SUS304</td>
<td>Yes</td>
</tr>
<tr>
<td>Power supply</td>
<td>230 V, 50 Hz</td>
<td>Yes</td>
</tr>
<tr>
<td>Power requirement (kVA)</td>
<td>2.5</td>
<td>Yes</td>
</tr>
<tr>
<td>Dimension (W x D x H, mm)</td>
<td>473 x 610 x 830</td>
<td>Yes</td>
</tr>
<tr>
<td>Weight without rotor (kg)</td>
<td>110</td>
<td>Yes</td>
</tr>
<tr>
<td>CE mark</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Cat. No.</td>
<td>GZ-1736R</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

Display Screen
- Status of Speed, Time, Temperature, ACC, Lid Open / Close

Setting Speed
- Touch once: RPM
- Touch twice: ACC

Setting Temp.
- Touch once: ACC
- Touch twice: Temp (up to 99)

End Alarm
- Sound indicator
- (level: 0 ~ 10; silent)

At Set Speed
- Brakes the rotor at set speed / OFF: Brakes the rotor from starting
- Touch once to stop: Brakes the rotor from set speed (time: 0 ~ 99.9, silent)

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 (g-force): 3,134
- Max. height for tube fit (mm): 130

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

Swing-out Rotor,
- GRS-L-r250-4
- 4 loadings

Tube
- Tube capacity (ml): 1.5/2.0 3 5 10 15 15ml conical 50 50ml conical 15 85 250
- Tube rack
- Cat. No.: GAM-m2.0-20 (r250) 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)
- Hole dimension (Ф xL, mm): 11.3 x 39 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

- Temperature
- Display Screen
- Status of Speed, Time, Temperature, ACC, Lid Open / Close
- Setting Speed
- Touch once: RPM
- Touch twice: ACC
- Setting Temp.
- Touch once: ACC
- Touch twice: Temp (up to 99)
- End Alarm
- Sound indicator
- (level: 0 ~ 10; silent)
<table>
<thead>
<tr>
<th>Fixed Angle Rotor, GRF-L-500-6</th>
<th></th>
<th>Fixed Angle Rotor, GRF-L-50-8</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 x 500 ml</td>
<td>8 x 50 ml</td>
<td>30°</td>
</tr>
<tr>
<td>Hole diameter (mm): 70</td>
<td>Hole diameter (mm): 30.5</td>
<td></td>
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<tr>
<td>Max. height for tube fit (mm): 170</td>
<td>Max. height for tube fit (mm): 120</td>
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<tr>
<td>Tube capacity (ml): 10</td>
<td>Tube capacity (ml): 10</td>
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</tr>
<tr>
<td>Adaptor: None</td>
<td>Adaptor: None</td>
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</tr>
<tr>
<td>Cat. No.: GAS-15(500) GAS-c15(500)</td>
<td>Cat. No.: GAS-15(50)</td>
<td></td>
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<tr>
<td>Adaptor bore (ФxL, mm): 17 x 98</td>
<td>Adaptor bore (ФxL, mm):</td>
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<tr>
<td>Radius (mm): 92.5</td>
<td>Radius (mm):</td>
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</tr>
<tr>
<td>Max. RPM: 15,000</td>
<td>Max. RPM:</td>
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<tr>
<td>Max. RCF (g-force): 23,017</td>
<td>Max. RCF (g-force):</td>
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<table>
<thead>
<tr>
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<th>Fixed Angle Rotor, GRF-L-50-6</th>
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<tbody>
<tr>
<td>6 x 250 ml (6 x 15 ml)</td>
<td>6 x 50 ml</td>
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<td>Hole diameter (250/15) (mm): 62/17</td>
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<td>Max. height for tube fit (250/15) (mm): 130/120</td>
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<tr>
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<tr>
<td>Adaptor: None</td>
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<tr>
<td>Cat. No.: GAS-15(250) GAS-c15(250) GAS-50(250) GAS-c50(250)</td>
<td>Cat. No.: GAS-15(50)</td>
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<tr>
<td>Adaptor bore (ФxL, mm): 17 x 94 17 x 98 29 x 95 29.5 x 98</td>
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<td></td>
</tr>
<tr>
<td>Radius (mm): 91.5 92.5 90.5 93.5</td>
<td>Radius (mm):</td>
<td></td>
</tr>
<tr>
<td>Max. RPM: 15,000</td>
<td>Max. RPM:</td>
<td></td>
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<tr>
<td>Max. RCF (g-force): 23,017 23,268 22,765 23,520</td>
<td>Max. RCF (g-force):</td>
<td></td>
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<table>
<thead>
<tr>
<th>Fixed Angle Rotor, GRF-L-85-6</th>
<th></th>
<th>Fixed Angle Rotor, GRF-L-250-6</th>
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<tbody>
<tr>
<td>6 x 85 ml</td>
<td>6 x 50 ml</td>
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<td>Hole diameter (mm): 38.3</td>
<td>Hole diameter (mm): 30.5</td>
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<tr>
<td>Max. height for tube fit (mm): 125</td>
<td>Max. height for tube fit (mm): 120</td>
<td></td>
</tr>
<tr>
<td>Tube capacity (ml): 10 15 15 ml conical 50</td>
<td>Tube capacity (ml): 10</td>
<td></td>
</tr>
<tr>
<td>Adaptor: None</td>
<td>Adaptor: None</td>
<td></td>
</tr>
<tr>
<td>Cat. No.: GAS-15(85) GAS-c15(85) GAS-50(85) GAS-c50(85)</td>
<td>Cat. No.: GAS-15(50)</td>
<td></td>
</tr>
<tr>
<td>Adaptor bore (ФxL, mm): 17 x 94 17 x 98 29 x 95 29.5 x 98</td>
<td>Adaptor bore (ФxL, mm):</td>
<td></td>
</tr>
<tr>
<td>Radius (mm): 91.5 92.5 90.5 93.5</td>
<td>Radius (mm):</td>
<td></td>
</tr>
<tr>
<td>Max. RPM: 15,000</td>
<td>Max. RPM:</td>
<td></td>
</tr>
<tr>
<td>Max. RCF (g-force): 23,017 23,268 22,765 23,520</td>
<td>Max. RCF (g-force):</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fixed Angle Rotor, GRF-L-500-6</th>
<th></th>
<th>Fixed Angle Rotor, GRF-L-500-6</th>
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</thead>
<tbody>
<tr>
<td>6 x 500 ml</td>
<td>6 x 500 ml</td>
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<tr>
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<td>Hole diameter (mm): 70</td>
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</tr>
<tr>
<td>Max. height for tube fit (mm): 170</td>
<td>Max. height for tube fit (mm): 170</td>
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</tr>
<tr>
<td>Tube capacity (ml): 250 500</td>
<td>Tube capacity (ml): 250 500</td>
<td></td>
</tr>
<tr>
<td>Adaptor: None</td>
<td>Adaptor: None</td>
<td></td>
</tr>
<tr>
<td>Cat. No.: GAS-250(500)</td>
<td>Cat. No.: GAS-250(500)</td>
<td></td>
</tr>
<tr>
<td>Adaptor bore (ФxL, mm): 69 x 100</td>
<td>Adaptor bore (ФxL, mm): 69 x 100</td>
<td></td>
</tr>
<tr>
<td>Radius (mm): 138.3 158</td>
<td>Radius (mm): 138.3 158</td>
<td></td>
</tr>
<tr>
<td>Max. RPM: 8,000</td>
<td>Max. RPM: 8,000</td>
<td></td>
</tr>
<tr>
<td>Max. RCF (g-force): 9,896 11,305</td>
<td>Max. RCF (g-force): 9,896 11,305</td>
<td></td>
</tr>
</tbody>
</table>
GYROZEN 2236R centrifuge is designed for large capacity and high-speed daily working laboratories to save time with a streamlining process. This model goes up to 22,000 rpm (54,111 x g) with six of 50 ml tubes and 7,000 rpm (10,825 x g) with six of one-liter bottles. It covers down to PCR-tube and micro tubes and up to 1 L tubes. The beauty of this model is graphical display on a 7” touch screen with intuitive controls. All the setting conditions are shown in a numerical way and the actual operating status in a graphic. It also provides high flexibility in manipulations of sophisticated protocols such as multi-step centrifugation or step-wise continuous operation. 2236R is the best choice for the multi-users environment like a core facility with functions of ID and password control and tracking. It is widely used not only research laboratories but industrial production facilities too. With the lift-up lid and the small footprint of 2236R, you will love the freedom of space organization.

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

Fixed Angle Rotor, GRF-L-15-12
- 12 x 15 ml
- Max. Height for tube fit (mm): 125

Fixed Angle Rotor, GRF-L-c15-12
- 12 x 15 ml conical
- Max. Height for tube fit (mm): 125

Fixed Angle Rotor, GRF-L-m2.0-30
- 30 x 1.5/2.0 ml
- Max. Height for tube fit (mm): 52

Fixed Angle Rotor, GFR-L-s0.2-64
- 8 x 1 tube PCR strips, 64 x 0.2 ml
- Max. Height for tube fit (mm): 16
### Technical Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>Max. RPM</td>
<td>22,000 / 54,111 xg</td>
</tr>
<tr>
<td>Max. capacity</td>
<td>6 x 50 ml tubes / 6 x 1 L bottles</td>
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<tr>
<td>Max. speed</td>
<td>7,000 rpm (10,825 xg)</td>
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<tr>
<td>Max. capacity</td>
<td>4 x 250 ml / 48 x 15 ml / 1.5/2.0 ml</td>
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<tr>
<td>Temp. range</td>
<td>-20°C to +40°C</td>
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<tr>
<td>Time control</td>
<td>Timed / Continuous</td>
</tr>
<tr>
<td>Time counting modes</td>
<td>Selectable, at set speed or on demand</td>
</tr>
<tr>
<td>Display</td>
<td>Windows CE / 7” Touch screen</td>
</tr>
<tr>
<td>RPM/RCF conversion</td>
<td>Yes</td>
</tr>
<tr>
<td>Noise level (dB)</td>
<td>~ 60</td>
</tr>
<tr>
<td>ACC/DEC steps</td>
<td>9/10 steps</td>
</tr>
<tr>
<td>Program memory</td>
<td>100 steps</td>
</tr>
<tr>
<td>Actual Temperature</td>
<td>Menu</td>
</tr>
<tr>
<td>Fast Cool</td>
<td>Touch a part of [FAST COOL] for fast temp function.</td>
</tr>
<tr>
<td>Start / Stop operation</td>
<td>Touch a part of [OPEN DOOR] to open the lid.</td>
</tr>
<tr>
<td>Chamber material</td>
<td>SUS304</td>
</tr>
<tr>
<td>Power supply</td>
<td>230 V, 50 Hz (AC 220-230 V, 50/60 Hz)</td>
</tr>
<tr>
<td>Power requirement (kVA)</td>
<td>4.0</td>
</tr>
<tr>
<td>Dimension (W x D x H, mm)</td>
<td>824 x 634 x 1,049</td>
</tr>
<tr>
<td>Weight without rotor (kg)</td>
<td>240</td>
</tr>
<tr>
<td>CE mark</td>
<td>Yes</td>
</tr>
<tr>
<td>Cat. No. GZ-2236R</td>
<td></td>
</tr>
</tbody>
</table>

### Features

- 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.
## Fixed Angle Rotor, GRF-L-1000-6
- **Volume:** 6 x 1000 ml
- **Angle:** 25°
- **Hole diameter (mm):** 98
- **Max. height for tube fit (mm):** 175

### Specifications
- **Max. RPM:** 7,000
- **Max. RCF (g-force):**
  - 250 ml: 8,990 g-force
  - 500 ml: 10,047 g-force
  - 1000 ml: 10,825 g-force

### Accessories
- **GAS-250(1000)**
  - **Adaptor bore (Φ x L, mm):** 59.2 x 86.5
  - **Radius (mm):** 146.8
- **GAS-500(1000)**
  - **Adaptor bore (Φ x L, mm):** 59.2 x 86.5
  - **Radius (mm):** 146.8
- **GAS-1000(1000)**
  - **Adaptor bore (Φ x L, mm):** 59.2 x 86.5
  - **Radius (mm):** 146.8

### Tube Capacity
- **250 ml:** 8
- **500 ml:** 8
- **1000 ml:** 8

### Tube Capacity (ml)
- **250 ml:** 1000 ml
- **500 ml:** 1000 ml
- **1000 ml:** 1000 ml

### Tube Rack
- **Cat. No.:** GAM-m2.0-20(r250) GAM-5-12(r250) GAM-15-12(r250) GAM-c15-9(r250)
- **Rack capacity (ea/4):**
  - 20/80
  - 12/48
  - 12/48
  - 9/36
- **Hole dimension (Φ x L, mm):**
  - 11.3 x 39
  - 13.5 x 58
  - 13.5 x 80
  - 17.5 x 90

## Fixed Angle Rotor, GRF-L-1000-4
- **Volume:** 4 x 1000 ml
- **Angle:** 25°
- **Hole diameter (mm):** 98
- **Max. height for tube fit (mm):** 175

### Specifications
- **Max. RPM:** 8,000
- **Max. RCF (g-force):**
  - 250 ml: 9,674 g-force
  - 500 ml: 11,055 g-force
  - 1000 ml: 12,071 g-force

### Accessories
- **GAS-250(1000)**
  - **Adaptor bore (Φ x L, mm):** 59.2 x 86.5
  - **Radius (mm):** 146.8
- **GAS-500(1000)**
  - **Adaptor bore (Φ x L, mm):** 59.2 x 86.5
  - **Radius (mm):** 146.8
- **GAS-1000(1000)**
  - **Adaptor bore (Φ x L, mm):** 59.2 x 86.5
  - **Radius (mm):** 146.8

### Tube Capacity
- **250 ml:** 1000 ml
- **500 ml:** 1000 ml
- **1000 ml:** 1000 ml

### Tube Capacity (ml)
- **250 ml:** 1000 ml
- **500 ml:** 1000 ml
- **1000 ml:** 1000 ml

### Tube Rack
- **Cat. No.:** GAM-m2.0-20(r250) GAM-5-12(r250) GAM-15-12(r250) GAM-c15-9(r250)
- **Rack capacity (ea/4):**
  - 20/80
  - 12/48
  - 12/48
  - 9/36
- **Hole dimension (Φ x L, mm):**
  - 11.3 x 39
  - 13.5 x 58
  - 13.5 x 80
  - 17.5 x 90

## Swing-out Rotor, GRS-L-r250-4
- **Volume:** 4 loadings
- **Angle:** 90°

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

### Plate Capacity
- **MTP DWP**
  - **Holder capacity (ea/4):**
    - 4/16
    - 1/4

### 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 (g-force):** 3,134
  - **Max. height for tube fit (mm):** 130

### Tube Capacity
- **1.5/2.0:** 3, 5, 10, 15 ml conical
- **5:** 50 ml conical
- **15:** 150 ml
- **250:** 850, 250 ml conical

### Tube Rack
- **Cat. No.:** GAM-m2.0-20(r250) 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):**
    - 20/80
    - 12/48
    - 12/48
    - 9/36
    - 4/16
    - 3/12
    - 2/8
    - 1/4
  - **Hole dimension (Φ x L, mm):**
    - 11.3 x 39
    - 13.5 x 58
    - 13.5 x 80
    - 17.5 x 90
    - 17.5 x 90
    - 30.2 x 90
    - 30.5 x 90
    - 30.5 x 90
    - 38.5 x 86.5
    - 62.5 x 87
### Fixed Angle Rotor, GRF-L-500-6
- **Capacity:** 6 x 500 ml
- **Hole diameter (mm):** 70
- **Max. height for tube fit (mm):** 170

<table>
<thead>
<tr>
<th>Tube Capacity</th>
<th>Tube Diameter (mm)</th>
<th>Max. RCF (g-force)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 ml</td>
<td>40.5</td>
<td>40,919</td>
</tr>
<tr>
<td>500 ml</td>
<td>42.5</td>
<td>41,366</td>
</tr>
<tr>
<td>500 ml</td>
<td>40.5</td>
<td>40,919</td>
</tr>
<tr>
<td>500 ml</td>
<td>42.5</td>
<td>41,366</td>
</tr>
<tr>
<td>500 ml</td>
<td>40.5</td>
<td>40,919</td>
</tr>
<tr>
<td>500 ml</td>
<td>42.5</td>
<td>41,366</td>
</tr>
</tbody>
</table>

### Fixed Angle Rotor, GRF-L-250-6
- **Capacity:** 6 x 250 ml (6 x 15 ml)
- **Hole diameter (250/15) (mm):** 62/17
- **Max. height for tube fit (250/15) (mm):** 130/120

<table>
<thead>
<tr>
<th>Tube Capacity</th>
<th>Tube Diameter (mm)</th>
<th>Max. RCF (g-force)</th>
</tr>
</thead>
<tbody>
<tr>
<td>250 ml</td>
<td>29</td>
<td>24,808</td>
</tr>
<tr>
<td>15 ml</td>
<td>13</td>
<td>25,318</td>
</tr>
</tbody>
</table>

### Fixed Angle Rotor, GRF-L-85-6
- **Capacity:** 6 x 85 ml (6 x 5 ml)
- **Hole diameter (85/5) (mm):** 62/17
- **Max. height for tube fit (85/5) (mm):** 130/120

<table>
<thead>
<tr>
<th>Tube Capacity</th>
<th>Tube Diameter (mm)</th>
<th>Max. RCF (g-force)</th>
</tr>
</thead>
<tbody>
<tr>
<td>85 ml</td>
<td>15</td>
<td>13,000</td>
</tr>
<tr>
<td>5 ml</td>
<td>7</td>
<td>13,200</td>
</tr>
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</table>

### Fixed Angle Rotor, GRF-L-c50-6
- **Capacity:** 6 x 50 ml conical
- **Hole diameter (50/15) (mm):** 38.3
- **Max. height for tube fit (50/15) (mm):** 125

<table>
<thead>
<tr>
<th>Tube Capacity</th>
<th>Tube Diameter (mm)</th>
<th>Max. RCF (g-force)</th>
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</thead>
<tbody>
<tr>
<td>50 ml</td>
<td>15</td>
<td>30,242</td>
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<tr>
<td>15 ml</td>
<td>7</td>
<td>31,793</td>
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</table>

### Fixed Angle Rotor, GRF-L-50-8
- **Capacity:** 6 x 50 ml
- **Hole diameter (50/15) (mm):** 25.5
- **Max. height for tube fit (50/15) (mm):** 120

<table>
<thead>
<tr>
<th>Tube Capacity</th>
<th>Tube Diameter (mm)</th>
<th>Max. RCF (g-force)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 ml</td>
<td>15</td>
<td>41,366</td>
</tr>
<tr>
<td>15 ml</td>
<td>7</td>
<td>41,813</td>
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<tr>
<td>5 ml</td>
<td>2</td>
<td>42,931</td>
</tr>
<tr>
<td>2 ml</td>
<td>1</td>
<td>46,062</td>
</tr>
</tbody>
</table>

### Fixed Angle Rotor, GRF-L-50-6
- **Capacity:** 6 x 50 ml
- **Hole diameter (50/15) (mm):** 25.5
- **Max. height for tube fit (50/15) (mm):** 120

<table>
<thead>
<tr>
<th>Tube Capacity</th>
<th>Tube Diameter (mm)</th>
<th>Max. RCF (g-force)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 ml</td>
<td>15</td>
<td>41,366</td>
</tr>
<tr>
<td>15 ml</td>
<td>7</td>
<td>41,813</td>
</tr>
<tr>
<td>5 ml</td>
<td>2</td>
<td>42,931</td>
</tr>
<tr>
<td>2 ml</td>
<td>1</td>
<td>46,062</td>
</tr>
</tbody>
</table>

### Fixed Angle Rotor, GRF-L-250-6
- **Capacity:** 6 x 25 ml (6 x 15 ml)
- **Hole diameter (250/15) (mm):** 62/17
- **Max. height for tube fit (250/15) (mm):** 130/120

<table>
<thead>
<tr>
<th>Tube Capacity</th>
<th>Tube Diameter (mm)</th>
<th>Max. RCF (g-force)</th>
</tr>
</thead>
<tbody>
<tr>
<td>250 ml</td>
<td>29</td>
<td>24,808</td>
</tr>
<tr>
<td>15 ml</td>
<td>13</td>
<td>25,318</td>
</tr>
</tbody>
</table>

### Fixed Angle Rotor, GRF-L-500-6
- **Capacity:** 6 x 500 ml
- **Hole diameter (500/15) (mm):** 62/17
- **Max. height for tube fit (500/15) (mm):** 170

<table>
<thead>
<tr>
<th>Tube Capacity</th>
<th>Tube Diameter (mm)</th>
<th>Max. RCF (g-force)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 ml</td>
<td>40.5</td>
<td>40,919</td>
</tr>
<tr>
<td>500 ml</td>
<td>42.5</td>
<td>41,366</td>
</tr>
<tr>
<td>500 ml</td>
<td>40.5</td>
<td>40,919</td>
</tr>
<tr>
<td>500 ml</td>
<td>42.5</td>
<td>41,366</td>
</tr>
<tr>
<td>500 ml</td>
<td>40.5</td>
<td>40,919</td>
</tr>
<tr>
<td>500 ml</td>
<td>42.5</td>
<td>41,366</td>
</tr>
</tbody>
</table>

### Fixed Angle Rotor, GRF-L-250-6
- **Capacity:** 6 x 25 ml (6 x 15 ml)
- **Hole diameter (250/15) (mm):** 62/17
- **Max. height for tube fit (250/15) (mm):** 130/120

<table>
<thead>
<tr>
<th>Tube Capacity</th>
<th>Tube Diameter (mm)</th>
<th>Max. RCF (g-force)</th>
</tr>
</thead>
<tbody>
<tr>
<td>250 ml</td>
<td>29</td>
<td>24,808</td>
</tr>
<tr>
<td>15 ml</td>
<td>13</td>
<td>25,318</td>
</tr>
</tbody>
</table>

### Fixed Angle Rotor, GRF-L-500-6
- **Capacity:** 6 x 500 ml
- **Hole diameter (500/15) (mm):** 62/17
- **Max. height for tube fit (500/15) (mm):** 170

<table>
<thead>
<tr>
<th>Tube Capacity</th>
<th>Tube Diameter (mm)</th>
<th>Max. RCF (g-force)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 ml</td>
<td>40.5</td>
<td>40,919</td>
</tr>
<tr>
<td>500 ml</td>
<td>42.5</td>
<td>41,366</td>
</tr>
<tr>
<td>500 ml</td>
<td>40.5</td>
<td>40,919</td>
</tr>
<tr>
<td>500 ml</td>
<td>42.5</td>
<td>41,366</td>
</tr>
<tr>
<td>500 ml</td>
<td>40.5</td>
<td>40,919</td>
</tr>
<tr>
<td>500 ml</td>
<td>42.5</td>
<td>41,366</td>
</tr>
</tbody>
</table>

### Fixed Angle Rotor, GRF-L-250-6
- **Capacity:** 6 x 25 ml (6 x 15 ml)
- **Hole diameter (250/15) (mm):** 62/17
- **Max. height for tube fit (250/15) (mm):** 130/120

<table>
<thead>
<tr>
<th>Tube Capacity</th>
<th>Tube Diameter (mm)</th>
<th>Max. RCF (g-force)</th>
</tr>
</thead>
<tbody>
<tr>
<td>250 ml</td>
<td>29</td>
<td>24,808</td>
</tr>
<tr>
<td>15 ml</td>
<td>13</td>
<td>25,318</td>
</tr>
</tbody>
</table>

### Fixed Angle Rotor, GRF-L-500-6
- **Capacity:** 6 x 500 ml
- **Hole diameter (500/15) (mm):** 62/17
- **Max. height for tube fit (500/15) (mm):** 170

<table>
<thead>
<tr>
<th>Tube Capacity</th>
<th>Tube Diameter (mm)</th>
<th>Max. RCF (g-force)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 ml</td>
<td>40.5</td>
<td>40,919</td>
</tr>
<tr>
<td>500 ml</td>
<td>42.5</td>
<td>41,366</td>
</tr>
<tr>
<td>500 ml</td>
<td>40.5</td>
<td>40,919</td>
</tr>
<tr>
<td>500 ml</td>
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<td>41,366</td>
</tr>
<tr>
<td>500 ml</td>
<td>40.5</td>
<td>40,919</td>
</tr>
<tr>
<td>500 ml</td>
<td>42.5</td>
<td>41,366</td>
</tr>
</tbody>
</table>
GYROZEN 1096R is a large capacity centrifuge for large-volume daily-working processes such as high-throughput sample preparation. This model offers a performance of up to 10,000 rpm (14,981 x g) with six of 250 ml tubes and 5,000 rpm (5,324 x g) with 96-well filter plate set. The capacity of eight 400 ml blood bags or 144 vacutainer tubes per single run makes 1096R ideal for blood fractionation and collection in blood banks, clinics and commercial laboratories. The two-step deceleration profile supports the separated blood phases being kept as it is. In addition, this model can be operated in a variety of applications like oil analysis, milk fat measurement, impurity investigation, etc. with many different shapes of 100 ml glass tubes. A wide range of accessories of six swing-out rotors and two fixed-angle rotors make it possible for versatile and high-throughput operations. The cooling function can set the temperature in the range from -10 °C to + 40 °C. Same as other GYROZEN refrigerated centrifuges, 1096R has a powerful cooling system that reaches 4 °C within 5 minutes at room temperature through the “Fast Cool” function. With GYROZEN 1096R centrifuge, you can enjoy the high-quality performance to retain the valuable samples at desired temperature and conditions.

▶ 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

### Specifications

**Fixed Angle Rotor, GRF-L-15-12**
- Tube capacity (pc): 12 tubes
- Hole diameter (mm): 17
- Max. height for tube fit (mm): 125

<table>
<thead>
<tr>
<th>Tube capacity (pc)</th>
<th>12</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. height for tube fit (mm)</td>
<td>125</td>
<td>125</td>
</tr>
</tbody>
</table>

**Fixed Angle Rotor, GRF-L-c15-12**
- Tube capacity (pc): 12 tubes conical
- Hole diameter (mm): 17
- Max. height for tube fit (mm): 125

<table>
<thead>
<tr>
<th>Tube capacity (pc)</th>
<th>12 tubes conical</th>
<th>12 tubes conical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. height for tube fit (mm)</td>
<td>125</td>
<td>125</td>
</tr>
</tbody>
</table>

**Fixed Angle Rotor, GRF-L-m2.0-30**
- Tube capacity (ml): 30 x 1.5/2.0 ml
- Angle: 45°
- Hole diameter (mm): 11.1
- Max. height for tube fit (mm): 52

<table>
<thead>
<tr>
<th>Tube capacity (ml)</th>
<th>0.2 0.5 1.5/2.0</th>
<th>0.2 0.5 1.5/2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptor</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Cat No.</td>
<td>GAS-m0.2(2) GAS-m0.5(2)</td>
<td>GAS-m0.2(2) GAS-m0.5(2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adaptor bore (Ф xL, mm)</th>
<th>6.5 x 23</th>
<th>8 x 31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. RPM</td>
<td>22,000</td>
<td>22,000</td>
</tr>
<tr>
<td>Max. RCF (g-force)</td>
<td>42,748 46,536</td>
<td>42,748 46,536</td>
</tr>
</tbody>
</table>

**Fixed Angle Rotor, GRF-L-s0.2-64**
- Tube capacity (ml): 8 x 8-tube PCR strips, 64 x 0.2 ml
- Angle: 45°
- Hole diameter (mm): 6.5
- Max. height for tube fit (mm): 16

<table>
<thead>
<tr>
<th>Tube capacity (ml)</th>
<th>0.2 8-tube PCR strip</th>
<th>0.2 8-tube PCR strip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptor</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Radius</td>
<td>1st: 58.6 / 2nd: 67.1</td>
<td>1st: 58.6 / 2nd: 67.1</td>
</tr>
<tr>
<td>Max. RPM</td>
<td>12,000</td>
<td>12,000</td>
</tr>
<tr>
<td>Max. RCF (g-force)</td>
<td>1st: 9,434 / 2nd: 10,803</td>
<td>1st: 9,434 / 2nd: 10,803</td>
</tr>
</tbody>
</table>
### Technical Specifications

- **Max. RPM/RCF:**
  - Fixed angle: 10,000 / 14,981 xg
  - Swing-out: 5,000 / 5,324 xg

- **Max. capacity:**
  - Fixed angle: 6 x 500 ml
  - Swing-out: 4 x 1,400 ml, 6 x 750 ml, 4 FTPs

- **Temp. range (°C):** -10 to +40

- **Fast Cool button:** Yes

- **Noise level (dB):** ~60

- **Program memory:** 100

- **Features:**
  - For up to 10,000 rpm (14,981 xg) with 6 x 250 ml tubes and 5,000 rpm (5,324 xg) with filter plate set
  - Temperature setting from -10° to 40°
  - 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 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

### Control Panel

- **Display Screen:**
  - RPM, RCF, Door Status, Lid Open/Closed, Host Info, Temp, ACC, DEC

- **Control Panel:**
  - Touch once: RPM
  - Touch twice: RCF

- **Start / Stop:**
  - LED ON: Start / Run
  - LED OFF: Stop

- **Setting Time:**
  - To 9 hr. 59 min. or Continuous (00:00)

- **ACC (1 ~ 9 / Max. 9):**

- **DEC (0 ~ 9 / Natural DEC 0):**

- **Sound volume:** (level: 0 ~ 10, 0: silent)

- **Features:**
  - Automatic rotor identification
  - Imbalance cut-off
  - Safety lid lock
  - Lid drop protection
  - Motorized lid open & close
  - Chamber material: SUS304
  - Power supply: 230 V, 50 Hz (AC 220-230 V, 50/60 Hz; 110 V optional)

- **Weight without rotor:** 180 kg

- **CE mark:** Yes

- **Cat. No.:** GZ-1096R

### At Set Speed

- **Start time from standing:**
  - 0:00 for up to 24 hours.
  - Beyond 24 hours data (0:00:00)

### Technical Specifications

- **Program SAVE / CALL:**
  - Touch once: CALL
  - Touch twice: SAVE (up to 100)

- **End Alarm:**
  - Sound volume: (level: 0 ~ 10, 0: silent)
Swing-out Rotor, GRS-L-1400-4W
4 loadings

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

Tube
Max. capacity (ml)
1
10
15
15 ml conical
50
50 ml conical
200
400

Tube Rack
Cat. No.
GAM-10-38(1400)
GAM-15-24(1400)
GAM-c15-24(1400)
GAM-50-12(1400)
GAM-c50-9(1400)
GAM-200-3(1400)
GAM-400-2(1400)

Hole dimension (Ф x L, mm)
16 x 88
17 x 98
17.2 x 100
29 x 93
29.5 x 100
104 x 39 x 135
104 x 58 x 135

Rack capacity (ea/4)
38/152
24/96
24/96
12/48
9/36
1/4
2/8

Swing-out Rotor, GRS-L-mw-4W
4 loadings

Microplate Holder
GLP-mw-1400
Max. capacity: 4 x 4 x 4, 4 x 4 x 8, 4 x 8 x 8, 4 x 8 x 16, 4 x 16 x 16, 4 x 16 x 32
Max. RCF: 3,535
Max. height for tube fit (mm): 140

Plate
Max. capacity (ml)
4
16
32
64

Tube
Max. capacity (ml)
0.5
1.5
3.0
5.0
15
30
50
100

Swing-out Rotor, GRS-L-750-6
6 loadings

Round 750 ml Bucket
GLB-750-750
Bore (Ф x L, mm): 99 x 101.5
Max. RPM: 4,000
Max. RCF (g-force): 3,982
Max. height for tube fit (mm): 142

Tube
Max. capacity (ml)
3
5
10
15
15 ml conical
50
50 ml conical
250
500 ml conical
750

Tube Rack
Cat. No.
GAM-5-24(750)
GAM-10-21(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/6)
24/144
21/126
19/114
14/84
7/42
5/30
1/6
1/6
1/6
1/6

Hole dimension (Ф x 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

Microplate Holder
GLP-mw-750
Max. capacity: 4 x 24, 4 x 48, 4 x 96, 4 x 144
Max. RCF: 3,384
Max. height for tube fit (mm): 152

Plate
Max. capacity (ml)
MTP DWP

Microplate Holder
GLP-mw-1400
Max. capacity: 4 x 24, 4 x 48, 4 x 96, 4 x 144
Max. RCF: 3,982
Max. height for tube fit (mm): 150

Plate
Max. capacity (ml)
MTP DWP Filter Plate

Round 500ml Bucket
GLB-500-750
Bore (Ф x L, mm): 69.2 x 135
Max. RPM: 4,000
Max. RCF (g-force): 4,248
Max. height for tube fit (mm): 165

Microplate Holder
GLP-mw-1400
Max. capacity: 4 x 24, 4 x 48, 4 x 96, 4 x 144
Max. RCF: 3,982
Max. height for tube fit (mm): 150

Plate
Max. capacity (ml)
MTP DWP

Microplate Holder
GLP-mw-1400
Max. capacity: 4 x 24, 4 x 48, 4 x 96, 4 x 144
Max. RCF: 3,982
Max. height for tube fit (mm): 150

Plate
Max. capacity (ml)
MTP DWP Filter Plate
Swing-out Rotor, GRS-L-750-4
4 loadings

Round 750 ml Bucket with Cap
GLB-b750-750/
GLB-750-750

- Bucket bore (Ф x L, mm): 99 x 101.5
- Radius (mm): 205
- Max. RPM: 4,000
- Max. RCF (g-force): 3,667
- Max. height for tube fit (mm): 130 (w/cap) / 142 (w/o cap)

- Tube capacity (ml): 3 5 10 15 15 ml conical 50 50 ml conical 250 250 ml 500 ml conical
- 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 (Ф x 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

- Microplate Holder
GLP-mw-750

- Holder bore (w x d x h, mm): 88 x 128.5 x 80
- Radius (mm): 171.5
- Max. RPM: 4,000
- Max. RCF (g-force): 3,068
- Plate capacity (ml): MTP DWP
- Holder capacity (ea/4): 4/16 1/4

Round 500 ml Bucket
GLB-500-750

- Bucket bore (Ф x L, mm): 69.2 x 135
- Radius (mm): 218
- Max. RPM: 4,000
- Max. RCF (g-force): 3,900
- Max. height for tube fit (mm): 165

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

Swing-out Rotor, GRS-L-r750-4
4 loadings

Round 750 ml Bucket
GLB-750-750

- Bucket bore (Ф x L, mm): 99 x 101.5
- Radius (mm): 205
- Max. RPM: 4,000
- Max. RCF (g-force): 3,667
- Max. height for tube fit (mm): 130

- Tube capacity (ml): 3 5 10 15 15 ml conical 50 50 ml conical 250 250 ml

Microplate Holder
GLP-mw-750

- Holder bore (w x d x h, mm): 88 x 128.5 x 80
- Radius (mm): 171.5
- Max. RPM: 4,000
- Max. RCF (g-force): 3,068
- Plate capacity (ml): MTP DWP
- Holder capacity (ea/4): 4/16 1/4

Rectangular 750 ml Bucket
GLB-r750-750

- Bucket bore (w x d x h, mm): 99 x 99 x 98
- Radius (mm): 200
- Max. RPM: 3,600
- Max. RCF (g-force): 2,898
- Max. height for tube fit (mm): 165

- Tube capacity (ml): 3 5 10 15 15 ml conical 50 50 ml conical 250 250 ml 500 ml conical
- Rack capacity (ea/4): 30/120 20/80 16/64 8/32 5/20 1/4 1/4 1/4
- Hole dimension (Ф x L, mm): 13 x 56.5 13 x 85 17.2 x 85 17.5 x 85 29.5 x 85 29.5 x 85 62.5 x 87 61 x 93 98 x 94

Round 500 ml Bucket
GLB-500-750

Round 500 ml Bucket with Cap
GLB-b500-750

- Bucket bore (Ф x L, mm): 69.2 x 135
- Radius (mm): 218
- Max. RPM: 4,000
- Max. RCF (g-force): 3,159
- Max. height for tube fit (mm): 165

- Tube capacity (ml): 500
- Bucket capacity (ea/4): 1/4
- Plate capacity (ml): 50 50 ml conical 250 250 ml 500 ml conical
- Rack capacity (ea/4): 12/48 8/32 5/20 1/4 1/4 1/4
- Hole dimension (Ф x L, mm): 13 x 56.5 13 x 85 17.2 x 85 17.5 x 85 29.5 x 85 29.5 x 85 62.5 x 87 61 x 93 98 x 94

Microplate Holder
GLP-mw-500

- Holder bore (w x d x h, mm): 88 x 128.5 x 80
- Radius (mm): 171.5
- Max. RPM: 3,600
- Max. RCF (g-force): 2,516
- Plate capacity (ml): MTP DWP
- Holder capacity (ea/4): 4/16 1/4

Microplate Holder
GLP-mw-r750

- Holder bore (w x d x h, mm): 88 x 128.5 x 80
- Radius (mm): 171.5
- Max. RPM: 3,600
- Max. RCF (g-force): 2,516
- Plate capacity (ml): MTP DWP
- Holder capacity (ea/4): 4/16 1/4
<table>
<thead>
<tr>
<th>Rotor/Accessory/Part</th>
<th>Description</th>
<th>Capacity</th>
<th>Max. RPM</th>
<th>Max. RCF (g-force)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed Angle Rotor, GRF-L-250-6</strong></td>
<td>6 x 250 ml</td>
<td>GLB-100L</td>
<td>4,000</td>
<td>2,737</td>
</tr>
<tr>
<td><strong>Fixed Angle Rotor, GRF-L-500-6</strong></td>
<td>6 x 500 ml</td>
<td>GLB-100L</td>
<td>4,000</td>
<td>11,305</td>
</tr>
<tr>
<td><strong>Swing-out Rotor, GRS-L-r250-4</strong></td>
<td>4 loadings</td>
<td>GLB-r250</td>
<td>4,000</td>
<td>4,358</td>
</tr>
<tr>
<td><strong>Micro Plate Holder</strong></td>
<td>GLP-mw-r250</td>
<td>Glass</td>
<td>4,000</td>
<td>4,191</td>
</tr>
<tr>
<td><strong>100 ml Bucket</strong></td>
<td>GLB-100(S)-r250</td>
<td>Glass</td>
<td>4,000</td>
<td>4,155</td>
</tr>
<tr>
<td><strong>Rectangular 250 ml Bucket</strong></td>
<td>GLB-r250-r250</td>
<td>Glass</td>
<td>4,000</td>
<td>3,134</td>
</tr>
<tr>
<td><strong>Tube Rack</strong></td>
<td>GAM-m2.0-20(r250)</td>
<td>20/80</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GAM-5-12(r250)</td>
<td>12/48</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GAM-15-12(r250)</td>
<td>12/48</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GAM-c15-9(r250)</td>
<td>9/36</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GAM-50-4(r250)</td>
<td>4/16</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GAM-c50-3(r250)</td>
<td>3/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GAM-85-2(r250)</td>
<td>2/8</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GAS-250(r250)</td>
<td>1/4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rotor/Accessory/Part</th>
<th>Description</th>
<th>Capacity</th>
<th>Max. RPM</th>
<th>Max. RCF (g-force)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed Angle Rotor, GRF-L-250-6</strong></td>
<td>6 x 250 ml</td>
<td>GLB-100L</td>
<td>4,000</td>
<td>2,737</td>
</tr>
<tr>
<td><strong>Fixed Angle Rotor, GRF-L-500-6</strong></td>
<td>6 x 500 ml</td>
<td>GLB-100L</td>
<td>4,000</td>
<td>11,305</td>
</tr>
<tr>
<td><strong>Swing-out Rotor, GRS-L-r250-4</strong></td>
<td>4 loadings</td>
<td>GLB-r250</td>
<td>4,000</td>
<td>4,358</td>
</tr>
<tr>
<td><strong>Micro Plate Holder</strong></td>
<td>GLP-mw-r250</td>
<td>Glass</td>
<td>4,000</td>
<td>4,191</td>
</tr>
<tr>
<td><strong>100 ml Bucket</strong></td>
<td>GLB-100(S)-r250</td>
<td>Glass</td>
<td>4,000</td>
<td>4,155</td>
</tr>
<tr>
<td><strong>Rectangular 250 ml Bucket</strong></td>
<td>GLB-r250-r250</td>
<td>Glass</td>
<td>4,000</td>
<td>3,134</td>
</tr>
<tr>
<td><strong>Tube Rack</strong></td>
<td>GAM-m2.0-20(r250)</td>
<td>20/80</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GAM-5-12(r250)</td>
<td>12/48</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GAM-15-12(r250)</td>
<td>12/48</td>
<td></td>
<td></td>
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