

# 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.

## | 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,<br>30 x 1.5/2.0 ml   |  |  |   | 6 x (250 & 15) ml,<br>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,<br>timed < 100 min<br>or continuous                            | Pulse,<br>timed < 10 hr<br>or continuous                             | Pulse,<br>timed < 10 hr<br>or continuous | Pulse,<br>timed < 100 min<br>or continuous                            | Pulse,<br>timed < 10 hr<br>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),<br>Oper Status,<br>Lid Open/Close,<br>Min:Sec,<br>ACC, DEC | RPM (RCF), Oper Status,<br>Lid Open/Close, Hr:Min,<br>Temp, ACC, DEC |  | RPM (RCF),<br>Oper Status,<br>Lid Open/Close,<br>Min:Sec,<br>ACC, DEC | RPM (RCF),<br>Oper Status,<br>Lid Open/Close,<br>Hr:Min, Temp,<br>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 620 x 375  | 473 x 600 x 840                          | 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

**GRS-G-750-4**

|   |   |   |   |
|---|---|---|---|
| <b>GLB-750-750</b>  | <b>GLB-b750-750</b>   | <b>GLB-500-750</b>  | <b>GLP-mw-750</b>   |
|  |  |  |  |
| 4 x 750 ml<br>4,000/3,667 xg  | 4 x 750 ml<br>4,000/3,667 xg  | 4 x 500 ml<br>4,000/3,900 xg  | 4 x 4 MTP<br>4,000/3,068 xg   |





only for 1580/1580R

**GRS-G-r750-4**



|  |   |   |
|--|---|---|
| <b>GLB-r750-r750</b>   | <b>GLB-500-r750</b>   | <b>GLP-mw-r750</b>  |
|  |  |  |
| 4 x 500 ml (C)<br>3,600/2,898 xg   | 4 x 500 ml<br>3,600/3,159 xg  | 4 x 4 MTP<br>3,600/2,485 xg   |

only for 1580/1580R





**GRS-G-250-4**

|   |   |   |   |
|---|---|---|---|
| <b>GLB-250-250</b>  | <b>GLB-c250-250</b>   | <b>GLB-60-250</b>   | <b>GLB-d20/10-250</b>   |
|  |  |  |  |
| 4 x 250 ml<br>5,000/5,394 xg  | 4 x 250 ml<br>5,000/5,394 xg  | 4 x 60 ml<br>5,000/5,394 xg   | 4 x 2 x (20 & 10 ml)<br>5,000/4,752 xg (20)<br>5,000/4,472 xg (10)                |

**GRS-G-r250-4**

|  |   |
|--|---|
| <b>GLB-r250-r250</b>   | <b>GLP-mw-r250</b>  |
|  |  |
| 4 x 250 ml<br>4,000/3,134 xg   | 4 x 4 MTPs<br>4,000/2,737 xg  |

**GRS-G-100-6**

|   |   |   |   |  |
|---|---|---|---|--|
| <b>GLB-b100-100</b>   | <b>GLB-10-8-100</b>   | <b>GLB-bd15-100</b>   | <b>GLB-bdc15-100</b>  | <b>GLB-b50-100</b>   |
|  |  |  |  |  |
| 6 x 100 ml<br>4,000/3,105 xg  | 6 x 8 x 10 ml<br>4,000/3,105 xg   | 6 x 2 x 15 ml<br>4,000/3,032 xg   | 6 x 2 x 15 ml (C)<br>4,000/3,105 xg   | 6 x 50 ml<br>4,000/3,032 xg  |

**GRF-G-250-6**

|   |
|---|
|  |
| 6 x (250 & 15 ml)<br>8,000/9,588 xg (15 ml: 9,395 xg)<br>only for 1580R               |

**GRF-G-85-6**

|   |
|---|
|    |
| 6 x 85 ml<br>12,000/17,709 xg (1580R)<br>10,000/12,298 xg<br>(1248R, 1248, 1236R, 1580) |

**GRF-G-50-8**

|   |
|---|
|  |
| 8 x 50 ml<br>15,000/25,910 xg (1580R)<br>12,000/16,582 xg<br>(1248R, 1236R, 1580)   |

**GRA-G-15-24**

**GLB-15-FA**

|   |
|---|
|  |
| 24 x 15 ml<br>4,000/3,134 xg  |

**GRF-G-15-24**

|   |
|---|
|  |
| 24 x 15 ml<br>8,000/<br>7,370 xg (inner) / 8,872 xg (outer)<br>only for R models    |

**GRF-G-m2.0-30**

|  |
|--|
|           |
| 30 x 2.0 ml<br>15,000/24,249 xg<br>(1580R, 1580)<br>12,000/15,520 xg<br>(1248R, 1248, 1236R) |

**GRF-G-s0.2-64**

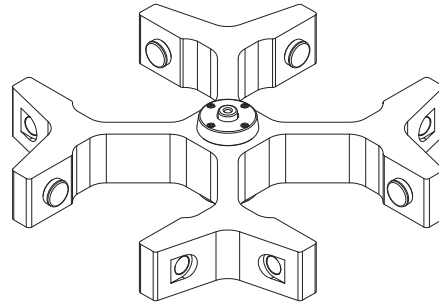
|   |
|---|
|  |
| 8 x PCR strip (8-tube)<br>12,000<br>9,434 xg (inner) / 10,803 xg (outer)              |

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

4 loadings

↳ 90°

only for 1580, 1580R



Bioseal Bucket with O-ring

|  |
|--|
| Bioseal 750 ml Round Bucket<br>GLB-b750-750 / GLB-750-750    |
| Bucket bore (ΦxL, 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) |

\* 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.                 | 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            | 1/4  |
| Hole dimension (ΦxL, 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<br>GLB-500-750  |
| Bucket bore (ΦxL, 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 |



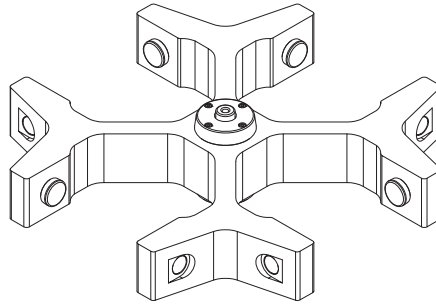
|   |
|---|
| Microplate Holder<br>GLP-mw-750               |
| Bucket bore (w x d x h, mm) : 88 x 128.5 x 80 |
| Radius (mm) : 171.5                           |
| Max. RPM : 4,000                              |
| Max. RCF : 3,068 xg                           |

|                        |      |     |
|------------------------|------|-----|
| 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                  | 250 ml conical        | 500 ml conical        |
| 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> | <b>GAS-c250(r750)</b> | <b>GAS-c500(r750)</b> |
| Rack capacity (ea/4)       | 30/125                |         | 20/80                  |    | 16/64                   | 8/32                  | 5/20                   | 1/4                  | 1/4                   | 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            | 61 x 93               | 98 x 94               |



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 |

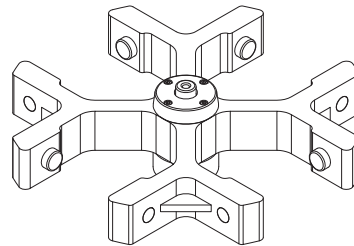


Microplate Holder  
**GLP-mw-r750**  
 Bucket bore (w x d x h, mm) : 88 x 128.5 x 80  
 Radius (mm) : 171.5  
 Max. RPM : 3,600  
 Max. RCF : 2,485 xg

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

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

4 loadings  
 ↗ 90°



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

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



|   |
|---|
| <b>250 ml Conical Bucket</b><br><b>GLB-c250-250</b>   |
| Bucket bore (ΦxL, mm) : 60.5 x 130.2<br>Radius (mm) : 193<br>Max. RPM : 5,000<br>Max. RCF : 5,394 xg<br>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><br><b>GLB-60-250</b>  |
| Bucket bore (ΦxL, mm) : 31.5 x 130.2<br>Radius (mm) : 193<br>Max. RPM : 5,000<br>Max. RCF : 5,394 xg<br>Max. height for tube fit (mm) : 165 |

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

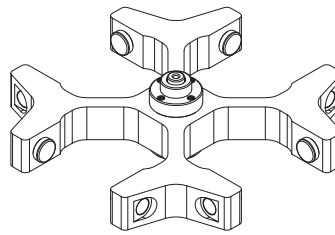


|   |
|---|
| <b>Dual Syringe Bucket</b><br><b>GLB-d20/10-250</b>   |
| Bucket bore (ΦxL, mm) :<br>22.5 x 100 (20) / 16 x 90 (10)<br>Radius (mm) : 160 / 170<br>Max. RPM : 5,000<br>Max. RCF : 4,472 xg / 4,752 xg<br>Max. height for tube fit (mm) : 132/125 |

|                        |                  |
|------------------------|------------------|
| 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<br>(r250) | GAM-50-4<br>(r250) | GAM-c50-3<br>(r250) | GAM-85-2(r250) |             | GAS-<br>250(r250) |
| Rack capacity (ea/4)          | 12/48          |           | 12/48           |    | 9/36                | 4/16               | 3/12                | 2/8            |             | 1/4               |
| Hole dimension<br>(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

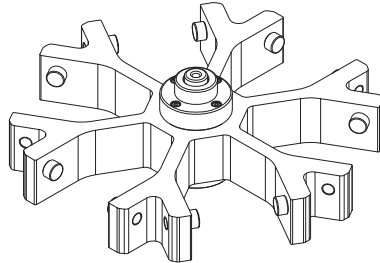
Bucket bore (w x d x h, mm)  
 : 88 x 128.5 x 80  
 Radius (mm) : 153  
 Max. RPM : 4,000  
 Max. RCF : 2,737 xg

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



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

6 loadings  
└ 90°



Bioseal Bucket with O-ring

|   |
|---|
| <b>Bioseal 100 ml Bucket<br/>GLB-b100-100</b>                   |
| Bucket bore (Φ x L, mm) : 47 x 99                               |
| Radius (mm) : 173.6   |
| Max. RPM : 4,000  |
| Max. RCF : 3,105 xg   |
| Max. height for tube fit (mm)<br>: 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<br/>(b100)</b> | <b>GAM-7-5<br/>(b100)</b> | <b>GAM-10-5<br/>(b100)</b> | <b>GAM-15-3<br/>(100)</b> | <b>GAM-c15-3<br/>(100)</b> | <b>GAS-c15<br/>(b100)</b> | <b>GAS-50<br/>(b100)</b> | <b>GAS-c50<br/>(b100)</b> | <b>GAS-85<br/>(b100)</b> | <b>GAS-100<br/>(b100)</b> |
| 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<br>(Φ x 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.



|   |
|---|
| <b>Vacutainer 10 ml Bucket<br/>GLB-10-8-100</b> |
| Bucket capacity : 8/ea                          |
| Bucket bore (Φ x L, mm) : 16 x 99               |
| 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 |



|   |
|---|
| <b>Bioseal Dual 15 ml Round Bucket<br/>GLB-bd15-100</b> |
| Bucket capacity : 2/ea                                  |
| Bucket bore (Φ x 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 |



|   |
|---|
| <b>Bioseal Dual 15 ml Conical Bucket<br/>GLB-bdc15-100</b>      |
| Bucket capacity : 2/ea  |
| Bucket bore (Φ x L, mm) : 17 x 104                              |
| Radius (mm) : 173.6   |
| Max. RPM : 4,000  |
| Max. RCF : 3,105 xg   |
| Max. height for tube fit (mm)<br>: 123 (w/ cap) / 127 (w/o cap) |

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



|   |
|---|
| <b>Bioseal 50 ml Bucket<br/>GLB-b50-100</b>                     |
| Bucket capacity : 1/ea  |
| Bucket bore (Φ x 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)<br>: 115 (w/ cap) / 125 (w/o cap) |



| 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 (Φ x 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.                                   | 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)                                | 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  |

### 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.                              | <b>GAS-15(50)</b>   |   | <b>GAS-c15(50)</b>  | -   |
| Adaptor bore (Φx 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)



|                         |   |   |   |   |   |   |
|-------------------------|---|---|---|---|---|---|
| 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)             | 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   |



Stainless Steel 15 ml Sleeve  
**GLB-15-FA**

Sleeve bore (Φx L, mm) : 18 x 97.5  
 Radius (mm) : 175.2  
 Max. RPM : 4,000  
 Max. RCF : 3,134 gx

**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.                              | <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 (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)  |   |