# Universal Centrifuges

## Z327

## Z327-K

HERMLE

Benchmark

4 x 200 ml

# Z327
# Z327-K

Z327

Z327-K

Both the Z327 and the refrigerated Z327-K offer a wide assortment of rotor options, making them ideal for a wide variety of research applications. Rotor exchange between swing out, micro, or high volume fixed angle rotors is very simple and can be done in a matter of seconds. The Z327-K features rear mounted refrigeration system, optimized for saving space on the lab bench at only 40 cm wide!

**Technical data**

| | |
|---|---|
| max. speed: | 18,000 rpm |
| max. RCF: | 23,542 xg |
| max. volume: | 4 x 200 ml |
| Speed range: | 200 – 18,000 rpm |
| Temperature range Z327-K: | -20°C to 40°C |
| Running time: | 59 min 50 s / 10 s increments<br>99 h 59 min / 1 min increments |
| Dimensions Z327: | 15.7 in x 14 in x 19 in<br>40 cm x 36 cm x 48 cm (WxHxD) |
| Z327-K: | 15.7in x14 in x 27.5 in<br>40 cm x 36 cm x 70 cm (W x H x D) |
| Weight Z327 / Z327-K: | 95 lbs / 132 lbs<br>43 kg / 60 kg |
| Power input: Z327 / Z327-K: | 460 W / 660 W |
| Order No.: Z327: | Z327, 120 V / 50-60 Hz<br>Z327-E, 230 V / 50-60 Hz |
| Z327-K: | Z327-K, 120 V / 50-60 Hz<br>Z327-K-E, 230 V / 50-60 Hz |

Z327-K

**Specifications**

- Maintenance-free induction drive
- Microprocessor with large LCD display
- Motor driven lid lock
- Automatic radio-frequency rotor identification system (RFID) with over speed protection, immediately upon rotor insertion
- Active imbalance identification and cut-off (rotor specific)
- CFC-free refrigeration system (Z327-K)
- A large variety of rotors and accessories
- Audible signal at the end of each run with several melody options
- Noise level under 63 dBA at max. speed
- Manufactured according to international safety regulations, i.e. IEC 61010
- Rotor exchange is easy to handle
- Optimized airflow system keeps the samples cool (Z327)
- Stainless steel chamber

**Distinct Control Panel**

- Simple one handed Touch-Operation
- Easy to program with gloves on
- Splash proof digital display
- Permanent indication of Preset and Actual Values
- Selection of speed in both rpm and rcf, with increments of 10
- 10 acceleration and 10 deceleration rates, Possibility of brakeless deceleration
- Preselection of the temperature from - 20°C to 40°C with 1°C increments (Z327-K)
- Indication of the sample temperature (Z327-K)
- Pre-cooling program option (Z327-K)
- Standstill cooling (Z327-K)
- Pre-selection of running time from 10 s to 99 h 59 min or continuous
- Storage of up to 99 runs including rotor type
- Quick-key for short runs
- Diagnostic program
- Timer: the centrifuge starts at the preselected time

# Accessories Z327 and Z327-K

## Rotor/Bucket

## Adapter

### Order No.: Z327-200

Swing out rotor 4 place w/ buckets
Angle: 0-90°
(w/o buckets: Z327-200-AC)

Z327-200-BUK
Bucket for Adapter

Z327-200-LID
Lid for Bucket I hermetically sealed

Acceleration in s: 21/102
Deceleration in s: 12/387
max. speed: 5,000 rpm
RCF-Value: 4,136 xg
max. radius: 14.8 cm

| Volume | 200 ml bottle | 200 ml conical | 100 ml RB Glass | 85 ml RB/OR |
|---|---|---|---|---|
| Tubes Ø in mm | 56 | 56 | 40 | 38 |
| Length min./max. (mm) | 112 | 120 | 95/115 | 95/108 |
| Tubes per Rotor | 4 | 4 | 4 | 4 |
| Radius Correction (cm) | 0.0 | 0.0 | 0.2 | 0.2 |
| Order No. Adapter: Z327-200-___ | without | A200 | A100 | A85 |

| Volume | 50 ml RB/OR | 50 ml conical | 50 ml skirted | 25/30 ml Universal | 25/30 ml RB/OR | 15 ml conical | 15 ml conical | 15 ml RB | 5/7 ml RB | 5 ml conical | 1.5/2.0 ml micro | 6-10 ml Vakut.® | 6-10 ml Vakut.® | 1.8-7 ml Vakut.® | 50 ml conical |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tubes Ø in mm | 29 | 29 | 29 | 25 | 25 | 17 | 17 | 17 | 13 | 17 | 11 | 16 | 16 | 13 | 29 |
| Length min./max. (mm) | 95/103 | 116 | 116 | 95/105 | 90/110 | 120 | 120 | 60/107 | 65/100 | 60/70 | 40 | 130 | 100 | 75/100 | 116 |
| Tubes per rotor | 4 | 4 | 4 | 4 | 4 | 16 | 12 | 28 | 32 | 20 | 32 | 4 | 28 | 32 | 8 |
| Radius Correction (cm | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.0 | 0.2 | 0.2 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.0 |
| )Order No. Adapter: Z327-200-___ | A50R | A50 | A50SS | A25 | A30 | A15B* | A15 | A15R | A57 | A5F | A20 | A15L | A10 | A57 | B50 |

*only without bucket lid

### Order No.: Z306-100

Swing out rotor 4 place
Angle: 0-90°

Acceleration in s: 12/93
Deceleration in s: 12/226
max. speed: 4,500 rpm
RCF-Value: 3,350 xg
max. radius: 14.8 cm

| Volume | 145 ml Nalgene® | 100 ml RB Glass | 85 ml RB/OR | 50 ml RB Glass | 50 ml conical |
|---|---|---|---|---|---|
| Tubes Ø in mm | 50 | 44 | 38 | 29 | 29 |
| Length min./max. (mm) | 100 | 90/108 | 90/108 | 90/118 | 116 |
| Tubes per rotor | 4 | 4 | 4 | 4 | 4 |
| Radius Correction (cm) | 1.0 | 1.0 | 0.8 | 0.7 | 0.3 |
| Order No. Adapter: Z306-100-___ | A145 | A100 | A85 | A50R | A50 |

| Volume | 50 ml Rim | 30 ml Universal | 15 ml conical | 15 ml RB | 6-10 ml Vakut.® | 1.8-7 ml Vakut.® | 1.5/2.0 ml micro |
|---|---|---|---|---|---|---|---|
| Tubes Ø in mm | 29 | 25 | 17 | 17 | 16 | 13 | 11 |
| Length min./max. (mm) | 116 | 95/105 | 120 | 90/108 | 90/108 | 75/100 | 40 |
| Tubes per rotor | 4 | 4 | 8 | 28 | 28 | 28 | 40 |
| Radius Correction (cm) | 0.6 | 1.1 | 0.0 | 0.4 | 0.4 | 0.7 | 5.5 |
| Order No. Adapter | A50SS | A30 | A15 | A10 | A10 | A57 | A20 |

### Order No.: Z326-100H

Swing out rotor 4 Places
w/ sealed buckets
Angle:0-90°

Z326-100H-BUK
Bucket for Tube Rack w/ lid

Z326-100H-LID
Lid for bucket

Acceleration in s: 15/100
Deceleration in s: 15/150
max. Speed: 5000 rpm
RCF-value: 4080 xg
max. Radius: 14.6 cm
Temp. at max. speed: 2°C

| Volume | 100 ml RB Glass | 85 ml RB/OR | 50 ml RB/OR | 50 ml Falcon® |
|---|---|---|---|---|
| Tubes ø in mm | 40 | 38 | 29 | 29 |
| Length min./max. in mm | 90/108 | 90/108 | 90/133 | 116 |
| Tubes per rotor | 4 | 4 | 4 | 4 |
| Radius correction (cm) | 0.9 | 0.6 | 0.6 | 0.4 |
| Order-No.: Z326-100H- | A100 | A85 | A50R | A50 |

| Volume | 50 ml skirted | 30 ml Universal | 15 ml Falcon® | 15 ml Falcon® | 15 ml RB Glass | 6-10 ml Vakut.® | 10-15ml Vakut.® | 1.8-7 ml Vakut.® | 1.5 ml Reakt. |
|---|---|---|---|---|---|---|---|---|---|
| Tubes Ø in mm | 29 | 25 | 17 | 17 | 17 | 16 | 16 | 13 | 11 |
| Length min./max. (mm) | 116 | 95/105 | 120 | 120 | 90/108 | 75/100 | 75/125 | 75/100 | 42 |
| Tubes per rotor | 4 | 4 | 4 | 8 | 16 | 16 | 4 | 16 | 20 |
| Radius Correction (cm) | 0.7 | 1.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| Order No. Tube rack | A50SS | A30 | A15S | A15* | A15R | A10 | A15L* | A57 | A20 |

* only without bucket lid

| Volume | 50ml Falcon® | 15ml Falcon® |
|---|---|---|
| Tubes Ø in mm | 29 | 17 |
| Length min./max. (mm) | 116 | 120 |
| Tubes per rotor | 8 | 12 |
| Radius Correction (cm) | 0.0 | 0.0 |
| Order No. Tube rack | B50 | B15 |

# Accessories Z327 and Z327-K

## Rotor/Bucket

### Order No.: Z326-02MP

Swing out rotor 2 x 3 Microplates
Angle: 0-90°

## Adapter

Acceleration in s: 22/155
Deceleration in s: 16/518
max. speed: 4,500 rpm
RCF-Value: 2,716 xg
max. radius: 12.0 cm
max. loading height: 63 mm
max. loading weight: 310 g
Temp. at max. speed: -5°C

| Order No.: | Tube rack |
|---|---|
| BT1500-A1520 | 20 x 1.5 ml (2.0 ml) Tubes |
| BT1500-A05 | 20 x 0.5 ml |
| Z326-MPCA | 3 x Chamber Slide or 30/60 mm petri dish |

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### Order No.: Z326-3015

Angle rotor
30 x 15 ml Glass or 20 x 15 ml conical
Angle: 35°

Acceleration in s: 17/114
Deceleration in s: 11/632
max. speed: 4,500 rpm
RCF-Value: 2,830/2,467 xg
max. radius: 12.5/10.9 cm
max. Ø: 17 mm
Temp. at max. speed: -7°C

| Order No.: | Adapter | Ø [mm] | Length [min/max.]: |
|---|---|---|---|
| without | 1 x 15 ml Glass | 17.0 | 95/115 |
| without | 1 x 15 ml conical | 17.0 | 120 |
| C3100-ADP | 1 x 5/7 ml | 13 | 75/100 |

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### Order No.: Z326-1215

Angle rotor 12 x 15 ml
Angle: 32°

Acceleration in s: 18/103
Deceleration in s: 12/356
max. speed: 6,000 rpm
RCF-Value: 4,427 xg
max. radius: 11.0 cm
max. Ø: 17 mm
Temp. at max. speed: -9°C

| Volume | 15 ml conical | 15 ml | 4-7ml Vakut.® | 1.8-5 ml Vakut.® |
|---|---|---|---|---|
| Tubes Ø in mm | 17 | 17 | 13 | 13 |
| Length min./max. in mm | 120 | 105/120 | 100 | 75 |
| Order No. Adapter | without | without | C3100-ADP | C3100-ADP |

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### Order No.: Z326-0650

Angle rotor 6 x 50 ml
Angle: 40°

Acceleration in s: 15/102
Deceleration in s: 11/486
max. speed: 6,000 rpm
RCF-Value: 4,427 xg
max. radius: 11.0 cm
max. Ø: 29 mm
Temp. at max. speed: -6°C

| Volume | 50 ml conical | 50 ml RB/OR | 15 ml conical | 7 ml | 5 ml |
|---|---|---|---|---|---|
| Tubes Ø in mm | 29 | 29 | 17 | 17 | 18 |
| Length min./max. in mm | 116 | 100/120 | 120 | 97/120 | 100/105 |
| Order No. Adapter | without | without | Z206-50-A15 | Z206-50-A57 | Z206-50-A57C* *with Z206-50-A57 |

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### Order No.: Z326-0685-25

Angle rotor 6 x 85 ml
Angle: 25°

Acceleration in s: 65/399
Deceleration in s: 38/988
Acceleration in s: 98/495
Deceleration in s: 47/1,068
max. speed: 11,000 rpm
max. speed: 13,500 rpm
RCF-Value: 13,932 xg
RCF-Value: 20,984 xg
max. radius: 10.3 cm
max. Ø: 38 mm
Temp. at max. speed: 15°C

| Order No.: | Adapter | Ø [mm] | Length [min./max.]: |
|---|---|---|---|
| without | 1 x 85 ml | 38 | 113 |
| Z326-85-A50R | 1 x 50 ml | 29 | 105 |
| Z326-85-A50 | 1 x 50 ml conical | 29 | 116 |
| Z326-85-A30 | 1 x 30 ml | 25 | 90/103 |
| Z326-85-B15R | 2 x 15 ml | 17 | 95/100 |
| Z326-85-A15R | 1 x 15 ml | 17 | 103/110 |
| Z326-85-A15 | 1 x 15 ml conical | 17 | 120 |

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### Order No.: Z326-0685

Angle rotor 6 x 85 ml
Angle: 38°

Acceleration in s: 62/412
Deceleration in s: 34/1,310
max. speed: 9,000 rpm
RCF-Value: 10,413 xg
max. radius: 11.5 cm
max. Ø: 38 mm
Temp. at max. speed: 1°C

| Order No.: | Adapter | Ø [mm] | Length [min./max.]: |
|---|---|---|---|
| without | 1 x 85 ml | 38 | 113 |
| Z326-85-A50R | 1 x 50 ml | 29 | 105 |
| Z326-85-A50 | 1 x 50 ml conical | 29 | 116 |
| Z326-85-A30 | 1 x 30 ml | 25 | 90/103 |
| Z326-85-B15R | 2 x 15 ml | 17 | 95/100 |
| Z326-85-A15R | 1 x 15 ml | 17 | 103/110 |
| Z326-85-A15 | 1 x 15 ml conical | 17 | 120 |

# Accessories Z327 and Z327-K

| Rotor/Bucket | Adapter |
|---|---|

## Order No.: Z326-0485

Angle rotor 4 x 85 ml
Angle: 30°

Acceleration in s: 68/307
Deceleration in s: 34/1,102
max. speed: 12,000 rpm
RCF-Value: 14,809 xg
max. radius: 9.2 cm
max. Ø: 38 mm
Temp. at max. speed: 3°C

| Order No.: | Adapter | Ø [mm] | Length [min./max.]: |
|---|---|---|---|
| without | 1 x 85 ml | 38 | 113 |
| Z326-85-A50R | 1 x 50 ml | 29 | 105 |
| Z326-85-A50 | 1 x 50 ml conical* | 29 | 116 |
| Z326-85-A30 | 1 x 30 ml | 25 | 90/103 |
| Z326-85-B15R | 2 x 15 ml | 17 | 95/100 |
| Z326-85-A15R | 1 x 15 ml | 17 | 103/110 |
| Z326-85-A15 | 1 x 15 ml conical* | 17 | 120 |

*only without rotor lid

## Order No.: Z326-0650-HS

Angle rotor 6 x 50 ml (round)
Angle: 26°

Acceleration in s: 44/358
Deceleration in s: 26/772
max. speed: 12,000 rpm
RCF-Value: 13,522 xg
max. radius: 8.4 cm
max. Ø: 29 mm
Temp. at max. speed: 4°C

| Order No.: | Adapter | Ø [mm] | Length [min./max.]: |
|---|---|---|---|
| without | 1 x 50 ml round | 29 | 95/115 |
| Z326-50-A30 | 1 x 30 ml | 25 | 92/95 |
| Z326-50-B15R | 1 x 15 ml | 17 | 100/105 |
| Z326-50-A15R | 1 x 15 ml conical* | 17 | 120 |

*only without rotor lid

## Order No.: Z326-1050

Angle rotor 10 x 50 ml conical
Angle: 38°

Acceleration in s: 59/374
Deceleration in s: 35/1.698
max. speed: 7,500 rpm
RCF-Value: 8,141 xg
max. radius: 13 cm
max. Ø: 29 mm
Temp. at max. speed: 0°C

| Order No.: | Adapter | Ø [mm] | Length [min./max.]: |
|---|---|---|---|
| Z326-50-B15HS | 1 x 15 ml RB | 17 | 97/123 |
| Z326-15-A7* | 1 x 7 ml | 13.5 | 95/115 |
| Z326-15-A5* | 1 x 5 ml | 13.5 | 70/90 |
| Z326-15-A20* | 1 x 1.5/2.0 ml | 11 | 42 |
| Z326-50-A15 | 1 x 15 ml conical | 17 | 120 |

*only possible with adapter Z326-50-A15 or Z326-50-B15

## Order No.: Z326-1205

Angle rotor 12 x 5 ml Tubes
Angle: 45°

Acceleration in s: 24/206
Deceleration in s: 20/436
Acceleration in s: 26/220
Deceleration in s: 21/420
max. speed: 14,000 rpm
max. speed: 15,000 rpm
RCF-Value: 18,624 xg
RCF-Value: 21,379 xg
max. radius: 8.5 cm
max. Ø: 17 mm
Temp. at max. speed: 2°C

| Order No.: | Adapter | Ø [mm] | Length [min./max.]: |
|---|---|---|---|
| without | 1 x 5.0 ml conical | 17 | 60 |
| Z216-05-C10 | 1 x 1.0 ml Cryo, flat | 12.6 | 41 |
| Z216-05-C18 | 1 x 1.8 ml Cryo, round | 12.6 | 48 |

## Order No.: Z326-2010

Angle rotor 20 x 10 ml
Angle: 30°

Acceleration in s: 54/357
Deceleration in s: 29/842
max. speed: 12,000 rpm
RCF-Value: 15,775 xg
max. radius: 9.8 cm
max. Ø: 16 mm
Temp. at max. speed: 4°C

| Order No.: | Adapter | Ø [mm] | Length [min./max.]: |
|---|---|---|---|
| without | 1 x 10 ml | 16 | 80 |

## Order No.: Z326-3020H

Angle rotor 30 x 1.5/2.0 ml
Angle: 45°

Acceleration in s: 31/189
Deceleration in s: 20/504
Acceleration in s: 35/205
Deceleration in s: 22/465
max. speed: 13,000 rpm
max. speed: 14,000 rpm
RCF-Value: 17,758 xg
RCF-Value: 20,595 xg
max. radius: 9.4 cm
max. Ø: 11 mm
Temp. at max. speed: 6°C

| Order No.: | Adapter | Ø [mm] | Length [min./max.]: |
|---|---|---|---|
| without | 1 x 2.0 ml | 11 | 40 |
| without | 1 x 1.5 ml | 11 | 40 |
| 704.005 | 1 x 0.5 ml | 8 | 45 |
| 704.004 | 1 x 0.4/0.2 ml PCR | 6 | 45 |

# Accessories Z 327 and Z 327 K

| Rotor/Bucket | Adapter |
|---|---|

## Order No.: Z326-4420

Angle rotor 44 x 1.5/2.0 ml
Angle: 32°/55°

Acceleration in s: 31/256
Deceleration in s: 21/441
max. speed: 15,000 rpm
RCF-Value: 21,379 xg
max. radius: 8.5 cm
max. Ø: 11 mm
Temp. at max. speed: 3°C

| Order No.: | Adapter | Ø [mm] | Length [min./max.]: |
|---|---|---|---|
| without | 1 x 2.0 ml | 11 | 40 |
| without | 1 x 1.5 ml | 11 | 40 |
| C1008-A5-6 | 1 x 0.5 ml | 8 | 45 |
| C1008-A2-6 | 1 x 0.4/0.2 ml PCR | 6 | 45 |

## Order No.: Z326-2420

PPS - Lid

Angle rotor 24 x 1.5/2.0 ml
Angle: 45° I hermetically sealed

Acceleration in s: 25/222
Deceleration in s: 17/261
max. speed: 15,000 rpm
RCF-Value: 21,379 xg
max. radius: 8.5 cm
max. Ø: 11 mm
Temp. at max. speed: 3°C

| Order No.: | Adapter | Ø [mm] | Length [min./max.]: |
|---|---|---|---|
| without | 1 x 2.0 ml | 11 | 40 |
| without | 1 x 1.5 ml | 11 | 40 |
| C1008-A5-6 | 1 x 0.5 ml | 8 | 45 |
| C1008-A2-6 | 1 x 0.4/0.2 ml PCR | 6 | 45 |

## Order No.: Z326-2420H

Alu - Lid

Angle rotor 24 x 1.5/2.0 ml
Angle: 45° I hermetically sealed
(aluminum lid)

Acceleration in s: 26/222
Deceleration in s: 17/267
max. speed: 15,000 rpm
RCF-Value: 21,379 xg
max. radius: 8.5 cm
max. Ø: 11 mm
Temp. at max. speed: 4°C

| Order No.: | Adapter | Ø [mm] | Length [min./max.]: |
|---|---|---|---|
| without | 1 x 2.0 ml | 11 | 40 |
| without | 1 x 1.5 ml | 11 | 40 |
| C1008-A5-6 | 1 x 0.5 ml | 8 | 45 |
| C1008-A2-6 | 1 x 0.4/0.2 ml PCR | 6 | 45 |

## Order No.: Z326-3202

Angle rotor 4 x 8-place PCR Strips
Angle: 45°

Acceleration in s: 14/126
Deceleration in s: 15/154
max. speed: 15,000 rpm
RCF-Value: 15,343 xg
max. radius: 6.1 cm
max. Ø: 6 mm
Temp. at max. speed: 2°C

The intuitive control panel makes it easy for anyone to operate Hermle Centrifuges.

# The Perfect Fit

**Easy Handling:**

- The ergonomic control panel is very user-friendly and enables a smooth and swift operation process.
- There is no need to remove surgical gloves during operation.
- Strictly a HERMLE application, you can store up to 99 different programs.
- Make yourself comfortable; operate this model from your laptop or computer. Our multi-functional software, "H-Control“, allows you to control the centrifuge independently and save your protocols (this function has to be ordered separately).
- For re-assurance that your samples are finished, an acoustic signal will sound when the centrifugation is complete (this function can be deactivated).

**Safety:**

- The Z327 and Z327-K have an automatic imbalance shut off system
- There is over speed protection incorporated for each rotor.
- You can only start the models when the centrifuge lid is closed.
- In case of operation malfunction, an error code will appear on the display; this helps to indicate the reason for the malfunction and to eliminate it.
- Its´ stable and firm design, made of massive steel, ensures excellent mechanical protection.
- The buckets of the swing out rotor Z327-100H are hermetically sealable.

**Efficient and Versatile:**

- Due to the wide range of adapter and rotor options, models Z327 and Z327-K can hold all common tubes and bottles, up to 200 ml.
- With easy rotor exchange, you can switch between different kinds of rotors like swing-out, microlitre, microplate or big volume fixed angle rotors.
- Despite the high capacity, the design of these devices is compact and space saving, even the Z327-K with its powerful refrigeration system.
- Profit from our "pre-cooling“ function, cool down the rotor rapidly to your desired temperature. For this, the centrifuge automatically determines the necessary speed for each individual rotor (Z327-K only).

# More from HERMLE Benchmark a wide range of options

Universal Centrifuge Z 366 K

max. speed 16,000 rpm
max. volume 6 x 250 ml

Compact Centrifuge Z 207 A

max. speed 6,800 rpm
max. volume 8 x 15 ml

For more Information, please visit our website www.hermleusa.com

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