# UNIVERSAL CENTRIFUGES

- Z 326
- **Z** 326 K









## Z 326 Z 326 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 (Z 326 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 (Z 326)
- Stainless steel chamber

Both the table top centrifuge Z 326 and the refrigerated table top centrifuge Z 326 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 angled rotors is very simple and can take place in a matter of seconds. The Z 326 K includes the refrigeration system on the back side of the unit, optimized for the lab bench at only 40 cm wide.

#### **Technical data**

 Max. speed:
 18,000 rpm

 Max. RCF:
 23,542 xg

 Max. volume:
 4 x 145 ml

 Speed range:
 200 - 18,000 rpm

Temperature range

Z 326 K: -20°C to 40°C

Running time: 59 min 50 s / 10 s increments

99 h 59 min / 1 min increments

Dimensions

Z 326: 40 cm x 36 cm x 48 cm (wxhxd) Z 326 K: 40 cm x 36 cm x 70 cm (wxhxd)

Weight:

Z 326 / Z 326 K: 43 kg / 60 kg

Power input:

Z 326 / Z 326 K: 455 W / 660 W

Order No.:

Z 326: 312.00 V03 - Z 326, 230 V / 50 - 60 Hz

312.00 V04 - Z 326, 120 V / 50 - 60 Hz

Z 326 K: 311.00 V05 - Z 326 K, 230 V / 50 - 60 Hz

311.00 V06 - Z 326 K, 120 V / 50 - 60 Hz



#### **Distinct Control Panel**

- Simple one handed 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 g-force, with increments of 10
- 10 acceleration and 10 deceleration rates,
   Possibility of unbraked deceleration
- Preselection of the temperature from 20°C to 40°C with 1°C increments
- Indication of the sample temperature
- Pre-cooling program option
- Standstill cooling
- Pre-selection of running time from 10 s to 99 h 59 min or continous
- Storage of up to 99 runs incl. rotor type
- Quick-key for short runs
- Diagnostic program
- Timer: the centrifuge starts at the preselected time

#### Rotor/Bucket

#### Adapter

#### Order No.: 221.12 V20



Swing out rotor 4 place Angle: 0-90°

Acceleration in s: 15/100 Deceleration in s: 15/150 Max. speed: 4,500 rpm Max. RCF: 3,350 xg Max. radius: 14.8 cm Temp. at max. speed: -1°C Volume Tubes Ø in mm

Length min./max. (mm) Tubes per rotor Radius Correction (cm) Order No. Tube rack

145 ml 100 ml Nalgene® 50 RB Glass 44

90/108 1.0

626.000

90/108 0.8

626.001

85 ml

RB/OR

38

50 ml

RB Glass

92/118 90/118 0.7 0.7 626.008 626.009

50 ml

**RB** Glass

116 0.3 626.002

conical 29

Volume

Tubes Ø in mm

Length min./max. (mm) Tubes per rotor Radius Correction (cm) Order No. Tube rack

50 ml 30 ml 25 ml 5/7 ml 4.5 ml 5/7ml 6-10 ml 1.8-7 ml 15 ml 15 ml 1.5 ml Universal RB Glass conical RB Glass Sarstedt® 13 29 25 25 17 17 13 11 12 16 13 116 42 40 95/110 120 75/100 90/108 75/100 8 36 36 28 28 28 0.9 626 010 626 011 626 012 626.003 626.013 626.005 626.014 626.007 626.015 626.004 626 006

100

1.0

626.017

#### Order No.: 220.72 V20

Swing out rotor 4 place Angle: 0-90°

605.000 **Bucket for Tube Rack** 605.002 Hermetic lid for bucket



Acceleration in s: 15/100 Deceleration in s: 15/150 Max. speed: 5,000 rpm Max. RCF: 4,080 xg Max. radius: 14.6 cm Temp. at max. speed: 2°C Volume Tubes Ø in mm

Length min./max. (mm) Tubes per rotor Radius Correction (cm) Order No. Tube rack

100 ml RB Glass 40

0.9

705.000

90/108

90/108 4 0.6 705.012

85 ml

RB/OR

RB Glass RB/OR

50 ml

92/118

0.6

705.001

0.6

705.016

90/133

50 ml

0.6

705.010

116 0.4 705.006

conical 17

50 ml

conical

29

Volume

Tubes Ø in mm

Length min./max. (mm) Tubes per rotor Radius Correction (cm) Order No. Tube rack



30 ml Rim Universal 29 116 95/105 0.7 1.5 705.013 705.014

25 ml **RB Glass** conical 17 95/110 120 0.6 0.5 705.002 705.018

15 ml Rim 17 conical 17 120 120 0.5 0.6 705.005\* 705.015

5/7 ml **RB Glass RB Glass** 90/108 75/100 28 0.6 0.6

705.007

Reakt. 42 20 0.6 705.009

10 ml Sarstedt® Vakut.9 85/100 0.6

13 75/100 0.6 705.008 Vakut.9 conical 16 75/100

116 120 0.0 0.0 605.004 605.005

Order No.: 221.16 V20



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

Acceleration in s: 20/160 Deceleration in s: 15/360 Max. speed: 4,500 rpm Max. RCF: 2,716 xg

Max. radius: 12.0 cm Max. loading height: 63 mm Max. loading weight: 310 g Temp. at max. speed: 0°C

Order No.: 706.000

705.003

Tube rack 48 x 1.5 ml (2.0 ml) Tubes

705.011

Order No.: 221.19 V20



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

Acceleration in s: 15/160 Deceleration in s: 10/380 Max. speed: 4,500 rpm Max. RCF: 2,830/2,467 xg Max. radius: 12.5/10.9 cm Max. Ø: 17 mm

Temp. at max. speed: -6°C

Order No.: without without 701.011 701.012 701.015

Tube rack 1 x 15 ml Glass 1 x 15 ml conical 1 x 7 ml 1 x 5 ml (RIA) 1 x 1.5 ml

Ø (mm) 17.0 17.0 13.5 13.5 11

Length (min./max.): 95/115 120 95/115 70/90 42

#### Rotor/Bucket

#### Adapter

Order No.: 221.54 V20



Angle rotor 12 x 15 ml Angle: 32°

Acceleration in s: 13/88 Deceleration in s: 11/222 Max. speed: 6,000 rpm Max. RCF: 4,427 xg Max. radius: 11.0 cm Max. Ø: 17 mm Temp. at max. speed: -4°C

Tubes Ø in mm Length min./max. (mm)

Volume

105-120 95-115

without

15 ml

15 ml

120

without

50 ml

without

Tube rack

1 x 85 ml

5 ml

701.012

7 ml

701.011

11 42 65-90

1.5/2.0 ml

701.015

15 ml

conical

92/107

15 ml

RB

9 ml

Sarstedt®

Order No.: 221.55 V20



Angle rotor 6 x 50 ml Angle: 40°

Acceleration in s: 13/89 Deceleration in s: 11/239 Max. speed: 6.000 rpm Max. RCF: 4,427 xg Max. radius: 11.0 cm Max. Ø: 29 mm

Temp. at max. speed: -3°C Tubes Ø in mm Length min./max. (mm) Order No. Tube rack:

Volume

50 ml RB/OR

Ø (mm)

38

29

Order No.:



Angle rotor 6 x 85 ml

Deceleration in s: 40/960

Acceleration in s: 60/500 Deceleration in s: 50/1,260 Max. speed: 11,000 rpm

Max. Ø: 38 mm

Order No. Tube rack:

conical

without

708.019

100/105 708.003

708.030

97/120 708.030

220.78 V21



Angle: 25°

Acceleration in s: 40/400

Max. speed: 13,500 rpm Max. RCF: 13,932 xg Max. RCF: 20,984 xg Max. radius: 10.3 cm

Temp. at max. speed: 19°C

Order No.: without Adapter

707.003 707.004 707.002 707.015 707.000 707.001 707.014

1 x 50 ml 1 x 50 ml conical 1 x 30 ml 1 x 16 ml 2 x 15 ml 1 x 15 ml 1 x 15 ml conical

105 116 90/103 103/110 95/100 103/110 120

Length (min./max.):

113

Order No.: 221.18 V21



Angle rotor 6 x 85 ml Angle: 38°

Acceleration in s: 40/360 Deceleration in s: 40/1,050 Max. speed: 9,000 rpm Max. RCF: 10,413 xg Max. radius: 11.5 cm

Max. Ø: 38 mm Temp. at max. speed: 3°C

Order No.: without Adapter 707.003 707.004 707.002

707.015

707.000

707.001

707.014

Order No.:

without Adapter

1 x 50 ml 1 x 50 ml conical 1 x 30 ml 1 x 16 ml 1 x 15 ml 2 x 15 ml

Tube rack

1 x 85 ml

Ø (mm) Length (min./max.): 38 29 29 25 18 17 17

17

17

17

105 116 90/103 103/110 95/100 103/110 120

113

Order No.: 221.20 V20



Angle rotor 4 x 85 ml Angle: 30°

Acceleration in s: 60/300 Deceleration in s: 40/820 Max. speed: 12,000 rpm Max. RCF: 14,809 xg Max. radius: 9.2 cm Max. Ø: 38 mm Temp. at max. speed: 6°C

707.003 707.004 707.002 707.015 707.000 707.001 707.014

Tube rack 1 x 85 ml 1 x 50 ml 1 x 50 ml conical\* 1 x 30 ml 1 x 16 ml 1 x 15 ml 2 x 15 ml 1 x 15 ml conical\*

\*only without rotor lid

1 x 15 ml conical

Ø (mm) Length (min./max.): 38 29 29 90/103 25 18 17

103/110 95/100 103/110 120

113

105

116

Order No.: 221.22 V20



Angle rotor 6 x 50 ml Angle: 26°

Acceleration in s: 40/360 Deceleration in s: 30/570 Max. speed: 12,000 rpm Max. RCF: 13,522 xg Max. radius: 8.4 cm Max. Ø: 29 mm

Temp. at max. speed: 1°C

Order No.: without Adapter 708.019 708.003 708.004 708.017

Tube rack 1 x 50 ml 1 x 30 ml 1 x 16 ml 1 x 15 ml 1 x 15 ml conical\* \*only without rotor lid

Ø (mm) Length (min./max.): 29 25 18 17

95/115 92/95 100/105 100/105 120

Rotor/Bucket

Adapter

Order No.: 221.28 V20

V20

Angle rotor 20 x 10 ml Angle: 30° Acceleration in s: 40/360 Deceleration in s: 30/570 Max. speed: 12,000 rpm Max. RCF: 15,775 xg Max. radius: 9.8 cm Max. Ø: 16 mm Temp. at max. speed: 7° C Order No.: Tube rack Ø (mm) Length (min./max.): without Adapter 1 x 10 ml 16 80

Order No.: 221.17 V20



Angle rotor 30 x 1.5 / 2.0 ml Angle:  $45^{\circ}$ 

Acceleration in s: 25/200 Deceleration in s: 25/360 Acceleration in s: 25/210 Deceleration in s: 30/360 Max. speed: 13,000 rpm

Max. speed: 13,000 rpm Max. speed: 14,000 rpm Max. RCF: 17,758 xg Max. RCF: 20,595 xg Max. radius: 9.4 cm Max. Ø: 11 mm Temp. at max. speed: 9° C

Order No.: Tube rack Ø (mm) Length (min./max.): 1 x 2.0 ml 40 without Adapter 11 1 x 1.5 ml 40 without Adapter 11 704.005 1 x 0.5 ml 8 45 704.004 1 x 0.4/0.2 ml PCR 6 45

Order No.: 220.87 V22



PPS-Lid

Angle rotor 24 x 1.5 / 2.0 ml Angle: 45° | hermetically sealed Acceleration in s: 23/210 Deceleration in s: 16/240 Acceleration in s: 25/230

Deceleration in s: 17/420 Max. speed: 14,000 rpm Max. speed: 15,000 rpm Max. RCF: 18,624 xg Max. RCF: 21,379 xg Max. radius: 8.5 cm Max. Ø: 11 mm

Temp. at max. speed: 7°C

Order No.: Tube rack Ø (mm) Length (min./max.): without Adapter 1 x 2.0 ml 11 40 1 x 1.5 ml 40 without Adapter 11 704.005 1 x 0.5 ml 8 45 704.004 1 x 0.4/0.2 ml PCR 6 45

Order No.: 220.87 V20



Alu-Lid

Angle rotor 24 x 1.5 / 2.0 ml Angle: 45° | hermetically sealed Acceleration in s: 23/240 Deceleration in s: 16/240 Acceleration in s: 25/230 Deceleration in s: 17/420 Max. speed: 14,000 rpm

Max. speed: 15,000 rpm Max. RCF: 18,624 xg Max. RCF: 21,379 xg Max. radius: 8.5 cm Max. Ø: 11 mm Temp. at max. speed: 7°C

Order No.: Ø (mm) Length (min./max.): Tube rack 1 x 2.0 ml 40 11 without Adapter 40 without Adapter 1 x 1.5 ml 11 704.005 1 x 0.5 ml 8 45 1 x 0.4/0.2 ml PCR 45 704.004 6

Order No.: 221.23 V20

23 V20

Angle rotor 12 x 1.5 / 2.0 ml Angle:  $40^{\circ}$ 

Acceleration in s: 25/240 Deceleration in s: 20/210 Max. speed: 18,000 rpm Max. RCF: 23,542 xg Max. radius: 6.5 cm Max. Ø: 11 mm Temp. at max. speed: 3°C Order No.: 704.004

0.4 ml Tubes (Ø 6 x 50 mm) Adapter Kit (6 Pieces)

704.005

0.5 ml Tubes (Ø 8 x 32 mm) Adapter Kit (6 Pieces)

704.011

1.5 ml Adapter for full performance (necessary from 16,000 xg on) (6 Pieces)

Order No.: 221.68 V20

Angle rotor 44 x 1.5 / 2.0 ml Angle: 32°/55° Acceleration in s: 28/256 Deceleration in s: 21/434 Max. speed: 15,000 rpm Max. RCF: 21,379 xg Max. radius: 8.5 cm Max. Ø: 11 mm

Temp. at max. speed: 8°C

Order No.: without Adapter without Adapter 704.005 704.004 
 Tube rack
 Ø (mm)
 Length (min./max.):

 1 x 2.0 ml
 11
 40

 1 x 1.5 ml
 11
 40

 1 x 0.5 ml
 8
 45

 1 x 0.4/0.2 ml PCR
 6
 45

#### Rotor/Bucket

#### Adapter

Order No.: 220.92 V20



Angle rotor 64 x 0.5 ml Angle: 40°

Acceleration in s: 17/150 Deceleration in s: 12/170 Max. speed: 13,500 rpm Max. RCF: 16,298/17,725 xg Max. radius: 8.0/8.7 cm

Max. Ø: 8 mm Temp. at max. speed: 6°C

Order No.: 221.38 V20



Angle rotor 4 x 8 PCR Strips Angle: 45°

Acceleration in s: 16/130 Deceleration in s: 12/130 Max. speed: 15,000 rpm Max. RCF: 15,343 xg Max. radius: 6.1 cm Max. Ø: 6 mm

Temp. at max. speed: 5°C

Order No.: 221.35 V20



Angle rotor 12 x 5 ml Reaction Tubes Angle: 45°C

Acceleration in s: 25/205 Deceleration in s: 16/223

Acceleration in s: 27/220 Deceleration in s: 17/373 Max. speed: 14,000 rpm

Max. speed: 15,000 rpm Max. RCF: 18,624 xg Max. RCF: 21,379 xg Max. radius: 8.5 cm Max. ø: 17 mm

Temp. at max. speed: 6°C

Order No.:

701.015 1.5 - 2 ml Reaction Tubes (ø 11 x 42 mm)

Adapter Kit (6 Pieces)

701.016 1.0 ml Cryo Tubes (ø 12,6 x 41 mm)

Adapter Kit (6 Pieces)

701.017 1.8 ml Cryo Tubes (ø 12,6 x 48 mm)

Adapter Kit (6 Pieces)

Order No.: 221.52 V20



Angle rotor 10 x 50 ml conical Angle: 38°

Acceleration in s: 63/380 Deceleration in s: 37/796 Max. speed: 7,500 rpm Max. RCF: 8,141 xg Max. radius:13 cm Max. ø: 29 mm Temp. at max. speed: 2°C

Adapter Length (min./max.) Order No.: ø (mm) 97/123 708.050 1 x 15 ml RB 17 701.011\* 1 x 7 ml 13,5 95/115 70/90 701.012\* 1 x 5 ml 13,5 701.015\* 1 x 1.5/2.0 ml 11 708.051 1 x 15 ml conical 17

\*only possible with adapter 708.050 or 708.051

42

120

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



### 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 Z 326 and Z 326 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.
- For more safety, both models are equipped with two imbalance sensors.

#### **Efficient and Versatile:**

- Due to the wide range of adapter and rotor options, models Z 326 and Z 326 K can hold all common tubes and bottles, up to 145 ml.
- Due to the easy rotor exchange, you can switch between different kinds of rotors like swing-out, microlitre, microtitre or big volume fixed angle rotors.
- Despite the high capacity, the design of these devices is compact and space saving, even the Z 326 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 (only Z 326 K).

HERMLE

## More from HERMLE – a wide range of options





Refrigerated High Sped Centrifuge Z 32 HK

Max. speed 20,000 rpm Max. volume 4 x 145 ml Compact Centrifuge Z 207 A

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

For more Information, please visit our website!

E-Mail: vertrieb@hermleLT.de Visit us at: www.hermle-labortechnik.de LABORTECHNIK

Telephone: + 49 74 26 / 96 22 - 0 Telefax: + 49 74 26 / 96 22 - 49



