

# HERMLE *Benchmark*

## Z446 Series

Z446

Z446-K

Universal, High Capacity Centrifuges



- **High Capacity**, 4 x 750ml (accepts 28x50ml or 68x15ml)
- Advanced programming with auto rotor recognition
- Available with refrigeration
- Ideal for tissue culture laboratories



**Z446** Universal Centrifuge



**Refrigerated**

**Z446-K** Universal Centrifuge



### Z446 Series Summary

Speed up to 16,000 rpm  
G-Force up to 26,328 x g  
Swing Out Capacity:  
4 x 750ml  
48 x 50ml  
68 x 15ml  
12 x microplates

Angle Rotor Capacity  
44 x 1.5/2.0ml  
10 x 50ml  
30 x 15ml

### Z446 Features

#### Microprocessor Control

- Over-speed protection
- Automatic rotor identification
- Program Storage (99)
- Pre-Cool function (Z446-K only)
- Momentary spin button
- Imbalance detection
- Adjustable Accel/Decel
- Audible end of run alarm

Maintenance free induction drive  
Motor driven safety lid-lock  
Quiet operation, less than 65 DB  
Splash proof display  
Powerful Refrigeration (Z446-K only)

### Z446 Specifications

Speed Range: 200 to 16,000 rpm  
Max. RCF: 24,325 x g  
Max Capacity: 4 x 750 ml  
Timer: up to 99 hr, 59 min.  
Dimensions: 21.3 x 26.4 x 15.4 in.  
(W x D x H) 54 x 67 x 39 cm.  
Z446-K 28.7 x 26.4 x 15.4 in.  
73 x 67 x 39 cm.  
Weight: 174 lbs (79 kg)  
Z446-K 244 lbs (111 kg)  
Electrical: 120 or 230V, 50/60Hz  
Power Draw: 640W (Z446-K: 1630W)

Temp Range: -20° - 40° C  
(Z446-K only)



The Z446 universal centrifuge series offers the highest capacity of any benchtop Hermle-Benchmark model. With air-craft grade, premium alloy construction, the 4 x 750ml swing out rotor can withstand centrifugal forces upwards of 4,000 x g with full loads of up to 48 x 50ml or 68 x 15ml tubes.

Advanced microprocessor controls allow for instant rotor identification, which automatically converts the rotational speed to the relevant g-force (rcf), preventing the user from setting a speed above the capabilities of the installed rotor. In addition to retrieving saved programs, the easy to use front panel can adjust accel/decel rates, and change the end of run alarm tone.

Rotor exchange is simple and requires less than one minute. An included rotor wrench can be used to loosen and install all rotors. As soon as the rotor is placed on the motor shaft, the identification process activates and the installed rotor code is displayed on the backlit LCD display.

#### Ordering Information:

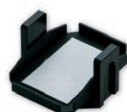
Z446\* Z446 Centrifuge (without rotor), 120V  
Z446-K\* Z446-K Refrigerated Centrifuge (without rotor), 120V

\*115V with US Plug. For 230V (EU Plug), please order -E.

## Universal Swing Out Rotors:



Z446-750



Z446-750-MP



Z446-750-LID  
(Hermetically sealed lid  
with sealing ring)

| Item: Z446-750-AC                         |                                       |
|-------------------------------------------|---------------------------------------|
| 4 x 750ml Swing Out Rotor                 |                                       |
| Max Speed: 4,000 rpm / 3,434 x g (Z446)   |                                       |
| Max Speed: 4,500 rpm / 4,346 x g (Z446-K) |                                       |
| Accel: 47 sec. / Decel: 49 sec.           |                                       |
| Z446-750-AC                               | Rotor without buckets                 |
| Z446-750                                  | Rotor complete with 4 round buckets   |
| Z446-750-BUK                              | Round buckets, 2/pk.                  |
| Z446-750-MP                               | Rectangular microplate buckets, 2/pk. |

| Inserts: (for round buckets) | Tube/Bottle  | qty/insert | qty./rotor |
|------------------------------|--------------|------------|------------|
| Z446-750-A500                | 500ml        | 1          | 4          |
| Z446-750-A250                | 250ml        | 1          | 4          |
| Z446-750-A50                 | 50ml conical | 7          | 28         |
| Z446-750-A30                 | 30ml round   | 8          | 32         |
| Z446-750-A15                 | 15ml conical | 17         | 68         |
| Z446-750-A10                 | 10ml         | 21         | 84         |
| Z446-750-A57                 | 5/7ml        | 32         | 128        |

## Additional Rotors:



Item: Z446-04500

|                                   |
|-----------------------------------|
| 4 x 500ml Angle Rotor (24°)       |
| Max Speed: 8,000 rpm / 10,367 x g |
| Accel: 73 sec. / Decel: 82 sec.   |



Item: Z366-06250

|                                   |
|-----------------------------------|
| 6 x 250ml Angle Rotor (28°)       |
| Max Speed: 8,000 rpm / 10,016 x g |
| Accel: 66 sec. / Decel: 84 sec.   |



Item: Z366-0685-25

|                                            |
|--------------------------------------------|
| 6 x 85ml Angle Rotor (38°)                 |
| Max Speed: 11,000 rpm / 15,555 x g (Z446)  |
| Max Speed: 13,000 rpm / 21,726 x g (Z446K) |
| Accel: 48 sec. / Decel: 46 sec.            |



Item: Z326-0485

|                                            |
|--------------------------------------------|
| 4 x 85ml Angle Rotor (30°)                 |
| Max Speed: 15,000 rpm / 23,140 x g (Z446)  |
| Max Speed: 16,000 rpm / 26,328 x g (Z446K) |
| Accel: 50 sec. / Decel: 45 sec.            |

### Inserts/Adapters

|                            |
|----------------------------|
| Z446-500-A15: 15ml conical |
| Z446-500-A50R: 50ml round  |
| Z446-500-A50: 50ml conical |

### Inserts/Adapters

|                                |
|--------------------------------|
| Z366-250-A15: 4 x 15ml conical |
| Z366-250-A50R: 50ml round      |
| Z366-250-A50: 50ml conical     |

### Inserts/Adapters

|                           |
|---------------------------|
| Z326-85-A15R: 15ml round  |
| Z326-85-A15: 15ml conical |
| Z326-85-A50R: 50ml round  |
| Z326-85-A50: 50ml conical |

### Inserts/Adapters

|                           |
|---------------------------|
| Z326-85-A15R: 15ml round  |
| Z326-85-A15: 15ml conical |
| Z326-85-A50R: 50ml round  |
| Z326-85-A50: 50ml conical |



## Additional Rotors (Continued):



**Item: Z326-0650-HS**

6 x 50ml Angle Rotor (26°)  
Max Speed: 13,000 rpm / 15,869 x g  
Accel: 28 sec. / Decel: 32 sec.



**Item: Z326-1050**

10 x 50ml Angle Rotor (38°)  
Max Speed: 10,000 rpm / 14,532 x g  
Max Speed: 10,500 rpm / 16,022 x g  
Accel: 56 sec. / Decel: 64 sec.



**Item: Z326-2010**

20 x 10ml Angle Rotor (30°)  
Max Speed: 12,000 rpm / 15,775 x g  
Accel: 32 sec. / Decel: 37 sec.



**Item: Z326-02MP**

Swing Out Rotor  
2 x 3 microplates (90°)  
Max Speed: 4,500 rpm / 2,716 x g  
Accel: 27 sec. / Decel: 23 sec.

### Inserts/Adapters

Z326-50-A30: 30ml round  
Z326-50-A15R: 15ml (conical or round)

### Inserts/Adapters

Z326-50-A30: 30ml round  
Z326-50-A15R: 15ml (conical or round)  
Z206-50-A15: 15ml conical  
Z206-50-A57: 5-7ml (12-13mm)  
Z206-50-A57C: Cushion for 5ml tube

### Inserts

BT1500-A1520: 20 x 1.5ml  
BT1500-A05: 20 x 0.5ml



**Item: Z326-2420**

24 x 1.5/2.0ml Angle Rotor (45°)  
Max Speed: 16,000 rpm / 24,325 x g  
Accel: 21 sec. / Decel: 30 sec.



**Item: Z326-2420H**

24 x 1.5/2.0ml Angle Rotor (45°)  
Hermetically Sealed Lid  
Max Speed: 16,000 rpm / 24,325 x g  
Accel: 21 sec. / Decel: 29 sec.



**Item: Z326-4420**

44 x 1.5/2.0ml Angle Rotor (32°/55°)  
Max Speed: 16,000 rpm / 24,039 x g  
Accel: 25 sec. / Decel: 30 sec



**Item: Z326-3202**

4 x 8 PCR Strips / 48 x 0.2ml (45°)  
Hermetically Sealed  
Max Speed: 15,000 rpm / 15,343 x g  
Accel: 12 sec. / Decel: 12 sec

## Also Available from Benchmark:

### Z216 Series High Speed Microcentrifuges

- Available with or without refrigeration
- Up to 44 tube capacity (44 x 1.5/2.0ml)
- Max Speed: 15,000 rpm / 21,379 x g

