

# Universal Centrifuges

■ Z 446

■ Z 446 K



HERMLE  
**Labnet**

4 x 750 ml

Z 446

Z 446 K



### Specifications

- Maintenance-free induction drive
- Microprocessor with large LCD display
- Motor driven lid lock
- Automatic rotor identification system with over speed protection, immediately upon rotor insertion
- Active imbalance identification and cut off (rotor-specific)
- CFC-free refrigeration system
- A large variety of rotors and accessories
- Audible signal at the end of each run with several melody options
- Noise level < 65 dBA (depend on rotor)
- Manufactured according to international safety regulations, i. e. IEC 61010

The Z 446 and Z 446 K high-volume centrifuges are able to accommodate a large tube capacity of up to 68 x 15 ml or 28 x 50 ml conical tubes. A maintenance free induction drive motor is able to reach 26,331 x g when using the 4 x 85 ml fixed angle rotor in the refrigerated model. Both models offer a wide variety of fixed angle and swing-out rotors, which are suitable for most applications in clinical, industrial and research laboratories.

### Technical Data

max. speed: 16,000 rpm  
max. RCF: 24,328 x g  
max. volume: 4 x 750 ml  
speed range: 200 - 16,000 rpm  
Temperature range  
Z 446 K: -20°C to 40°C  
Running time: 59 min 50 s / 10 s increments  
99 h 59 min 50 s / 1 min increments

### Dimensions (W x H x D):

Z 446: 54 x 39 x 67 cm / 21.3 x 15.4 x 26.4 in  
Z 446 K: 73 x 39 x 67 cm / 28.7 x 15.4 x 26.4 in

### Weight:

Z 446: 79 kg / 174 lbs  
Z 446 K: 111 kg / 245 lbs

### Power input:

Z 446: 640 W  
Z 446 K: 1630 W

### Order numbers:








Z446: C0446, 120 V / 50 - 60 Hz  
C0446-230V, 230 V / 50 - 60 Hz  
Z446K: C0446-K, 120 V / 50 - 60 Hz  
C0446-K-230V, 230 V / 50 - 60 Hz



### Distinct Control Panel

- Simple one handed operation
- Easy to program with gloves on
- Permanent indication of preset and actual values
- Selection of speed in both rpm and g-force, with increments of 10
- 10 acceleration and deceleration rates, possibility of unbraked deceleration
- Temperature range from -20°C to 40°C with 1°C increments
- Pre-cooling program
- Standstill cooling
- Pre-selection of the running time from 10 s to 99 h 59 min or continuous
- Storage of up to 99 runs including rotor
- Quick-key for short runs

# Accessories Z 446 and Z 446 K

Rotor/Bucket	Adapter				
<p>Order No.: C0036-18</p>  <p>Angle rotor 6 x 85 ml Angle: 38°</p>	<p>Acceleration in s: 48/463 Deceleration in s: 46/1,654 max. speed: 11,000 rpm max. RCF: 15,552 x g max. radius: 11.5 cm max. ø: 38 mm Temp. at max. speed: -1°C</p>	<p>Order Nr.: C0360-94C C0360-94C2 C0360-94B C0360-94A C0360-94D C0360-94X no adapter</p>	<p>Tube rack 1 x 15 ml 2 x 15 ml 1 x 30 ml 1 x 50 ml 1 x 50 ml conical 1 x 15 ml conical 85 ml</p>	<p>ø (mm) 17 17 25 29 29 17 38</p>	<p>Length (min./max.) 103/110 95/100 90/103 105 118 120 113</p>
<p>Order No.: C0036-20</p>  <p>Angle rotor 4 x 85 ml Angle: 30°</p>	<p>Acceleration in s: 50/448 Deceleration in s: 45/1,251 Acceleration in s: 61/480 Acceleration in s: 47/1,220 max. speed: 15,000/16,000 rpm max. RCF: 23,142/26,331 x g max. radius: 9.2 cm max. ø: 38 mm Temp. at max. speed: 7°C</p>	<p>Order Nr.: C0360-94C C0360-94C2 C0360-94B C0360-94A C0360-94D* C0360-94X* no adapter</p>	<p>Tube rack 1 x 15 ml 2 x 15 ml 1 x 30 ml 1 x 50 ml 1 x 50 ml conical 1 x 15 ml conical 85 ml</p>	<p>ø (mm) 17 17 25 29 29 17 38</p>	<p>Length (min./max.) 103/110 95/100 90/103 105 118 120 113</p> <p>*only without rotor lid</p>
<p>Order No.: C0036-21</p>  <p>Angle rotor 6 x 250 ml Angle: 28°</p>	<p>Acceleration in s: 66/573 Deceleration in s: 84/1,903 max. speed: 8,000 rpm max. RCF: 10,017 x g max. radius: 14 cm max. ø: 62 mm Temp. at max. speed: -1°C</p>	<p>Order Nr.: C0036-21C C0036-21B C0036-21D C0036-21A C0036-21E C0036-21F no adapter</p>	<p>Tube rack 1 x 50 ml conical 1 x 50 ml 2 x 30 ml 4 x 15 ml conical 5 x 10 ml 8 x 1.5 ml 1 x 250 ml</p>	<p>ø (mm) 29 29 26 17 16 11 62</p>	<p>Length (min./max.) 118 103 92 120 80 40 122</p>
<p>Order No.: C0036-22</p>  <p>Angle rotor 6 x 50 ml Angle: 26°</p>	<p>Acceleration in s: 28/264 Deceleration in s: 32/921 max. speed: 13,000 rpm max. RCF: 15,871 x g max. radius: 8.4 cm max. ø: 29 mm Temp. at max. speed: -4°C</p>	<p>Order Nr.: no adapter C0360-91C C0360-91A C0360-91D C0232-8B*</p>	<p>Tube rack 1 x 50 ml 1 x 30 ml 1 x 16 ml 1 x 15 ml 1 x 15 ml conical</p>	<p>ø (mm) 29 25 18 17 17</p>	<p>Length (min./max.) 95/115 92/95 100/105 100/105 116/125</p> <p>*only without rotor lid</p>
<p>Order No.: C0036-28</p>  <p>Angle rotor 20 x 10 ml Angle: 30°</p>	<p>Acceleration in s: 32/305 Deceleration in s: 37/988 max. speed: 12,000 rpm max. RCF: 15,777 x g max. radius: 9.9 cm max. ø: 16 mm Temp. at max. speed: -2°C</p>	<p>Order Nr.: no adapter</p>	<p>Tube rack 1 x 10 ml</p>	<p>ø (mm) 16</p>	<p>Length (min./max.) 80</p>
<p>Order No.: C0446-51</p>  <p>Angle rotor 4 x 500 ml Angle: 24°</p>	<p>Acceleration in s: 73/575 Deceleration in s: 82/2,317 max. speed: 8,000 rpm max. RCF: 10,375 x g max. radius: 14.5 cm max. ø: 61.5 mm Temp. at max. speed: 0°C</p>	<p>Order Nr.: C0446-51A C0446-51B C0446-51C C0446-51C C0446-51D C0446-51E C0446-51F C0446-51G</p>	<p>Tube rack 1 x 250 ml 1 x 250 ml corning 1 x 175 ml conical 1 x 225 ml conical 1 x 50 ml conical 3 x 50 ml 4 x 30 ml 6 x 15 ml conical</p>	<p>ø (mm) 61.5 60.5 61.5 61.5 29.5 29 29.5 17</p>	<p>Length (min./max.) 195 171 118 137 115 103 92 120</p>
<p>Order No.: C0446-52</p>  <p>Angle rotor 10 x 50 ml conical Angle: 38°</p>	<p>Acceleration in s: 60/480 Deceleration in s: 68/1,747 Acceleration in s: 56/458 Deceleration in s: 64/1,700 max. speed: 10,000/10,500 rpm max. RCF: 14,532/16,019 x g max. radius: 13 cm max. ø: 29 mm Temp. at max. speed: 2°C</p>	<p>Order Nr.: no adapter C0446-52A C0446-52A C0446-52B* C0446-52C* C0446-52D*</p>	<p>Tube rack 1 x 50 ml conical 1 x 15 ml conical 1 x 15 ml 1 x 7 ml 1 x 5 ml 1 x 1.5 ml</p>	<p>ø (mm) 29 17 17 13.5 13.5 11</p>	<p>Length (min./max.) 116 121 97/116 95/115 70/90 42</p> <p>*must be used in adapter C0446-52A</p>

# Accessories Z 446 and Z 446 K

Rotor/Bucket	Adapter				
<p>Order No.: C0446-87</p>  <p>Angle rotor 24 x 1.5/2.0 ml Angle: 45°</p>	<p>Acceleration in s: 21/204 Deceleration in s: 30/421 max. speed: 16,000 rpm max. RCF: 24,328 x g max. radius: 8.5 cm max. ø: 11 mm Temp. at max. speed: 1°C</p>	<p>Order Nr.: no adapter no adapter C1205 C1206 C1222</p>	<p>Tube rack 1.5 ml 2.0 ml 0.5/0.6 ml 0.4/0.25 ml 0.2 ml</p>	<p>ø (mm) 11 11 8 6 6</p>	<p>Length (min./max.) 40 40 45 45 45</p>
<p>Order No.: C0446-87H</p>  <p>Angle rotor 24 x 1.5/2.0 ml Angle: 45°</p>	<p>Acceleration in s: 21/205 Deceleration in s: 29/421 max. speed: 16,000 rpm max. RCF: 24,328 x g max. radius: 8.5 cm max. ø: 11 mm Temp. at max. speed: 1°C</p>	<p>Order Nr.: no adapter no adapter C1205 C1206 C1222</p>	<p>Tube rack 1.5 ml 2.0 ml 0.5/0.6 ml 0.4/0.25 ml 0.2 ml</p>	<p>ø (mm) 11 11 8 6 6</p>	<p>Length (min./max.) 40 40 45 45 45</p>
<p>Order No.: C0446-17</p>  <p>Angle rotor 30 x 1.5/2.0 ml Angle: 45°</p>	<p>Acceleration in s: 23/221 Deceleration in s: 30/561 max. speed: 15,000 rpm max. RCF: 23,645 x g max. radius: 9.4 cm max. ø: 11 mm Temp. at max. speed: 3°C</p>	<p>Order Nr.: no adapter no adapter C1205 C1206 C1222</p>	<p>Tube rack 1.5 ml 2.0 ml 0.5/0.6 ml 0.4/0.25 ml 0.2 ml</p>	<p>ø (mm) 11 11 8 6 6</p>	<p>Length (min./max.) 40 40 45 45 45</p>
<p>Order No.: C0446-16</p>  <p>Swing out rotor 2 x 3 Microtitreplates Angle: 0-90°</p>	<p>Acceleraton in s: 27/249 Deceleration in s: 23/488 max. speed: 4500 rpm max. RCF: 2716 x g max. radius: 12 cm max. loading height: 63 mm max. loading weight: 310 g Temp. at max. speed: -8°C</p>	<p>Order Nr.: C0320-504</p>	<p>Tube rack 48 x 1.5/2.0 ml</p>	<p>ø (mm)</p>	<p>Length (min./max.)</p>
<p>Order No.: C0446-75</p> <p>Buckets included</p>  <p>C0446-75H Microplate carrier</p>  <p>max height: 72 mm max weight: 310 g</p> <p>Swing out rotor 4 place Angle: 0-90°</p>	<p>Acceleraton in s: 47/483 Deceleration in s: 49/1,287 Acceleraton in s: 55/551 Deceleration in s: 54/1,501 max. speed: 4,000/4,500 rpm max. RCF: 3,434/4,347 x g max. radius: 19.3 cm Temp. at max. speed: 4°C</p> <p>C0446-75-LIDRND PC-Screw cap for round bucket</p> 	<p>Order Nr.:</p> <p>no adapter no adapter C0446-75E C0446-75B C0446-75C-CB* C0446-75C-RB C0446-75I C0446-75A-CB C0446-75A-RB C0446-75F C0446-75G C0446-75J C0446-75J C0446-75K C0446-75K C0446-75L C0446-75H</p>	<p>Tube rack</p> <p>1 x 750 ml bottle 1 x 500 ml bottle 1 x 250 ml bottle 5 x 50 ml conical 7 x 50 ml conical 7 x 50 ml round 8 x 30 ml 14 x 15 ml conical 18 x 15 ml round 21 x 10 ml 32 x 7 ml 21 x 1.8-5 or 4-7 ml 21 x 2-3/3.5-5 ml 21 x 2.6-2.9/2.7-4.3/4.9 ml 18 x 5/6-10 ml 18 x 4-5.5 ml/7.5-8.2mm 18 x 9-10 mm 38 x 1.1-1.4 ml 3 std. microplates</p>	<p>ø (mm) 98 98 62 29 29 29 26 17 17 16 13 13 11 13 16 15 16 8</p>	<p>Length (min./max.) 152 114 135 116 116 102/123 102/123 121 97/120 70/121 98/119 75/100 66/92 65/75/90 75/100 75/92 92 66</p> <p>*only without rotor lid</p>
<p>Order No.: C0383-75-V2</p>  <p>C0383-75H Microplate carrier</p>  <p>max height: 63 mm max weight: 310 g</p> <p>Swing out rotor 4 place Angle: 0-90°</p>	<p>Acceleraton in s: 47/483 Deceleration in s: 49/1,287 Acceleraton in s: 55/551 Deceleration in s: 54/1,501 max. speed: 4,000/4,500 rpm max. RCF: 3,434/4,347 x g max. radius: 19.3 cm Temp. at max. speed: 4°C</p> <p>C0383-75L PC-Screw cap for round bucket</p> 	<p>Order Nr.:</p> <p>C0383-75D C0383-75E C0383-75C* C0383-75B C0383-75A C0383-75A-RB C0383-75F C0383-75G C0383-75I C0383-75H</p>	<p>Tube rack</p> <p>1 x 500 ml bottle 1 x 250 ml bottle 7 x 50 ml conical 5 x 50 ml conical 12 x 15 ml conical 14 x 15 ml 19 x 10 ml 19 x 5/7 ml 25 x 1.5-2.0 ml 3 std. microplates</p>	<p>ø (mm) 80 62 28.5 28.5 26 17 16 13 11</p>	<p>Length (min./max.) 126 110/130 120 120 120 90/120 95/105 60/120 42</p> <p>*only without rotor lid</p>