**Laboratory Equipment**

**BOECO HEMATOCRIT CENTRIFUGE HC-240**

High-speed bench-top centrifuge for hematocrit determinations with brushless frequency drive. At 16,060 g sedimentation is completed in just a little over 6 minutes.

The HC-240 centrifuge includes a segmented hematocrit rotor for 24 capillaries. With the segmented hematocrit rotor every capillary has its own chamber. If a capillary breaks, the fragments stay in this chamber or segment without affecting other capillaries.

The lid of the rotor is evaluation disc and cover in one. The hematocrit value can be read off the lid/evaluation disc right after centrifugation.

**Controls and displays**

- **During centrifugation the actual values of the parameters are indicated**
- The centrifuge’s speed and running time can be variably adjusted for different applications.
- **Speed display in RPM or RCF**
  - RPM input from 200 to the maximum speed in steps of 10
  - RCF input from 200 to the maximum speed in steps of 10
- **Time**
  - Time min.: 1 - 99 min. in steps of 1 min.,
  - Time sec.: 1-59 sec. in steps of 1 sec.,
- **Continuous operation**
- **Brake stage**
  - Selectable between fast and slow
- **Pulse key**
  - For short centrifugation operations
- **Open lid key**

**Safety**

- **Lid locking and holding device**
- **Emergency lid lock release**
- **Lid closure of metal**
- **Imbalance switch-off**
- **Flexible motor bearings**
- **Deep metal rotor chamber (die-cast-aluminium) to securely accomodate the rotor**

**Design**

- **Smooth plastic housing, easy to clean**
- **Metal lid**
- **Deep metal rotor chamber**

**Technical details**

- **Max. RPM (speed) / RCF:**
  - 13,000 rpm / 16,060 RCF
- **Noise level:**
  - ≤ 57 dB(A)
- **Dimensions in mm (HxWxD):**
  - 228 x 262 x 352
- **Net weight:**
  - approx. 10 kg
- **Emission / Immunity:**
  - EN / IEC 61326-1, class B / FCC class B

**Code**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOE 01800-13</td>
<td>BOECO centrifuge HC-240, 208-240V, 50/60 Hz, with hematocrit rotor and lid as evaluation disc</td>
</tr>
<tr>
<td>BOE 01801-03</td>
<td>BOECO centrifuge HC-240, 208-240V, 50/60 Hz, with hematocrit rotor and lid as evaluation disc</td>
</tr>
</tbody>
</table>

**BOECO CENTRIFUGE SC-8**

Practical and handy the SC-8 is the ideal centrifuge for small sample volumes. It is supplied with a 8-place angle steel rotor, which accommodates various tube systems as well as 15 ml glass tubes without adapters. The centrifuge is microprocessor controlled.

**Controls and displays**

- **During centrifugation the actual values of the parameters are indicated**
- The centrifuge’s speed and running time can be variably adjusted for different applications.
- **Speed display in RPM or RCF**
  - RPM input from 200 to the maximum speed in steps of 10
  - RCF input from 200 to the maximum speed in steps of 10
- **Time**
  - Time min.: 1 - 99 min. in steps of 1 min.,
  - Time sec.: 1-59 sec. in steps of 1 sec.,
- **Continuous operation**
- **Brake stage**
  - Selectable between fast and slow
- **Pulse key**
  - For short centrifugation operations
- **Open lid key**

**Safety**

- **Lid locking and holding device**
- **Emergency lid lock release**
- **Lid closure of metal**
- **Imbalance switch-off**
- **Flexible motor bearings**
- **Deep metal rotor chamber (die-cast-aluminium) to securely accomodate the rotor**

**Design**

- **Smooth plastic housing, easy to clean**
- **Metal lid**
- **Deep metal rotor chamber**

The SC-8 conforms to safety regulations such as IEC 61010, or the CE mark and all relevant EC standards and DIN norms and has been manufactured under ISO 9001:2008.

**Technical details**

- **Max RPM (speed) / RCF:**
  - 6,000 rpm / 3,421 RCF
- **Noise level:**
  - ≤ 50 dB(A)
- **Dimensions in mm (HxWxD):**
  - 228 x 262 x 352
- **Net weight:**
  - approx. 9 kg
- **Emission / Immunity:**
  - EN / IEC 61326-1, class B / FCC class B

**Code**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOE 01800-13</td>
<td>BOECO centrifuge SC-8, 208-240 V, 50/60 Hz, complete with 8-place angle rotor</td>
</tr>
<tr>
<td>BOE 01801-02</td>
<td>BOECO centrifuge SC-8, 208-240 V, 50/60 Hz, complete with 8-place angle rotor</td>
</tr>
</tbody>
</table>

**Code**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOE 01801-03</td>
<td>BOECO centrifuge SC-8, 100-127 V, 50/60 Hz, complete with 8-place angle rotor</td>
</tr>
</tbody>
</table>

**Technical details**

- **Max RPM (speed) / RCF:**
  - 8,000 rpm / 10,000 RCF
- **Noise level:**
  - ≤ 50 dB(A)
- **Dimensions in mm (HxWxD):**
  - 228 x 262 x 352
- **Net weight:**
  - approx. 9 kg
- **Emission / Immunity:**
  - EN / IEC 61326-1, class B / FCC class B

**Code**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOE 01801-12</td>
<td>BOECO centrifuge SC-8, 100-127 V, 50/60 Hz, complete with 8-place angle rotor</td>
</tr>
</tbody>
</table>

**Technical details**

- **Max RPM (speed) / RCF:**
  - 6,000 rpm / 3,421 RCF
- **Noise level:**
  - ≤ 50 dB(A)
- **Dimensions in mm (HxWxD):**
  - 228 x 262 x 352
- **Net weight:**
  - approx. 9 kg
- **Emission / Immunity:**
  - EN / IEC 61326-1, class B / FCC class B

**Code**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOE 01801-12</td>
<td>BOECO centrifuge SC-8, 208-240 V, 50/60 Hz, complete with 8-place angle rotor</td>
</tr>
</tbody>
</table>

**Technical details**

- **Max RPM (speed) / RCF:**
  - 8,000 rpm / 10,000 RCF
- **Noise level:**
  - ≤ 50 dB(A)
- **Dimensions in mm (HxWxD):**
  - 228 x 262 x 352
- **Net weight:**
  - approx. 9 kg
- **Emission / Immunity:**
  - EN / IEC 61326-1, class B / FCC class B

**Code**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOE 01801-12</td>
<td>BOECO centrifuge SC-8, 100-127 V, 50/60 Hz, complete with 8-place angle rotor</td>
</tr>
</tbody>
</table>
BOECo CeNtrifuGe SC-6

The BOECo SC-6 is a small centrifuge with a swing-out rotor especially designed for use in clinical laboratories and medical practices. It accepts common blood or urine tubes up to a volume of 15 ml and accelerates them to a maximum speed of 4,000 rpm^{-1}.

The BOECo SC-6 delivers optimal separation results and a horizontal layer of the separating gel that is identical to that achieved with a large centrifuge. Samples are therefore optimally prepared for analysis.

Controls and displays
- During centrifugation the actual values of the parameters are indicated.
- The centrifuge’s speed and running time can be variably adjusted for different applications.
- Speed display in RPM x 100, input in steps of 100
- Time t/min: 1 - 99 min, continuous operation
- Pulse key: For short centrifugation operations
- Open lid key

Safety
- Lid locking and holding device
- Centrifuge chamber of stainless steel
- Emergency lid lock release
- Lid closure of metal
- Imbalance switch-off
- Flexible motor bearings

Design
- Smooth plastic housing, easy to clean
- Metal lid
- Stainless steel centrifuging chamber, deep-drawn and seamless

The SC-6 conforms to safety regulations such as IEC 61010, or the CE mark and all relevant EC standards and DIN norms and has been manufactured under ISO 9001:2008.

Technical details
- Max. RPM (speed) / RCF: 4,000 rpm / 2,254 RCF
- Noise level: ≤ 50 dB(A)
- Dimensions in mm (HxWxD): 239 x 326 x 389
- Net weight: approx. 13 kg
- Emission / Immunity: EN / IEC 61326-1, class B / FCC class B

Code | Description
--- | ---
BOE 02300-13 | BOECo centrifuge SC-6, 200-240 V, 50/60 Hz, complete with 6-place swing-out rotor and carriers 02331, and 02333 (6 of each)
BOE 02300-12 | BOECo centrifuge SC-6, 200-240 V, 50/60 Hz, complete with 6-place swing-out rotor and carriers 02331 and 02333 (6 of each)

BOECo CeNtrifuGe C-28A

The non-refrigerated microprocessor-controlled C-28A is the ideal bench-top centrifuge for performing daily routine tasks in doctors’ laboratories and small hospitals. But because of the wide range of accessories the C-28A can also be used for sample preparation in research and industrial laboratories.

The centrifuge has a brushless frequency drive (no carbon brushes). A special locking device allows effortless opening and closing of the lid with just one hand.

Controls and displays
- During centrifugation the actual values of the parameters are indicated.
- Entry of the running parameters via foil keypad
- Speed display in RPM x 100, input in steps of 100
- Time t/min: 1 - 99 min, continuous operation
- Impulse key: For short centrifugation operations

Safety
- Housing and lid of metal finished in a scratch and impact resistant coating
- Centrifuge chamber of stainless steel
- Lid locking and holding device
- See-through glass in the lid
- Emergency lid lock release
- Imbalance switch-off
- Easily exchangeable rotors
- Automatic rotor recognition

The C-28A conforms to safety regulations such as IEC 61010 or the CE mark and all relevant EC standards and DIN norms and has been manufactured under ISO 9001:2008.

Technical details
- Max. RPM (speed) / RCF: 6,000 rpm / 4,226 RCF
- Noise level: < 58 dB(A) (dependent on rotor)
- Dimensions in mm: 257 (H) x 366 (W) x 430 (D)
- Net weight: approx. 23 kg
- Emission / Immunity: EN / IEC 61326-1 class B, FCC class B

Code | Description
--- | ---
BOE 01206-13 | BOECo centrifuge C-28A, 208-240 V, 50-60 Hz, without rotor
BOE 01206-12 | BOECo centrifuge C-28A, 100-127 V, 50-60 Hz, without rotor

BOECo Germany

Laboratory Equipment
## Laboratory Equipment

### Centrifuges

#### Laboratory Centrifuges

<table>
<thead>
<tr>
<th>Cat.-No.</th>
<th>Dimension Ø x L mm</th>
<th>Capacity in ml</th>
<th>RCF</th>
<th>Run-up in sec</th>
<th>Run-down in sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>01620A</td>
<td>17 x 120</td>
<td>50</td>
<td>25</td>
<td>150</td>
<td>22</td>
</tr>
<tr>
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<td>22</td>
</tr>
<tr>
<td>01621</td>
<td>17 x 120</td>
<td>10</td>
<td>20</td>
<td>150</td>
<td>22</td>
</tr>
<tr>
<td>01622A</td>
<td>17 x 120</td>
<td>5</td>
<td>20</td>
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<tr>
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<td>22</td>
</tr>
<tr>
<td>01624</td>
<td>29 x 115</td>
<td>15</td>
<td>20</td>
<td>150</td>
<td>22</td>
</tr>
<tr>
<td>01625</td>
<td>29 x 115</td>
<td>10</td>
<td>20</td>
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<td>22</td>
</tr>
<tr>
<td>01626</td>
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<td>5</td>
<td>20</td>
<td>150</td>
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</tr>
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<td>01627</td>
<td>29 x 115</td>
<td>5</td>
<td>20</td>
<td>150</td>
<td>22</td>
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</table>

#### Laboratory Centrifuges, swing-out rotor

<table>
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<tr>
<th>Cat.-No.</th>
<th>Dimension Ø x L mm</th>
<th>Capacity in ml</th>
<th>RCF</th>
<th>Run-up in sec</th>
<th>Run-down in sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>01620A</td>
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<td>50</td>
<td>25</td>
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<td>22</td>
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<tr>
<td>01627</td>
<td>29 x 115</td>
<td>5</td>
<td>20</td>
<td>150</td>
<td>22</td>
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</tbody>
</table>

#### Swing-out rotor, 4-place, Cat. No. 01324, illustrated with carriers 01369 and lid 01492

<table>
<thead>
<tr>
<th>Tube per rotor</th>
<th>RCF</th>
<th>Run-up in sec</th>
<th>Run-down in sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>2200</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>5</td>
<td>2200</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>4</td>
<td>2200</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>3</td>
<td>2200</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>2</td>
<td>2200</td>
<td>22</td>
<td>22</td>
</tr>
</tbody>
</table>

#### Swing-out rotor, 6-place, Cat. No. 0132A, illustrated with carriers 01481 and lid 01492

<table>
<thead>
<tr>
<th>Tube per rotor</th>
<th>RCF</th>
<th>Run-up in sec</th>
<th>Run-down in sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>2700</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>10</td>
<td>2700</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>8</td>
<td>2700</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>6</td>
<td>2700</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>4</td>
<td>2700</td>
<td>22</td>
<td>22</td>
</tr>
</tbody>
</table>

#### Swing-out rotor, 8-place, Cat. No. 01482, illustrated with carriers 01490 and swing-out rotor, 4-place, Cat. No. 01324

<table>
<thead>
<tr>
<th>Tube per rotor</th>
<th>RCF</th>
<th>Run-up in sec</th>
<th>Run-down in sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>2800</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>12</td>
<td>2800</td>
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<tr>
<td>6</td>
<td>2800</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>4</td>
<td>2800</td>
<td>22</td>
<td>22</td>
</tr>
</tbody>
</table>

Please take care not to exceed the tubes’ max permissible RCF!

2) Braked run-down
BOECO MINI CENTRIFUGE M-6
This Mini-centrifuge is ideal for quick spin downs for Micro and PCR tubes and PCR strip. The M-6 is supplied with a 6 x 1.5/2.0 ml angle rotor, a 2 x 8x0.2ml rotor and a slide rotor.

Operation of the centrifuge begins when the lid is closed. When opening the lid the rotor automatically decelerates and comes to a stop. A rubber footplate keeps the unit stable and avoids vibration.

The M-6 is CE marked and has been manufactured under ISO 9001

Technical details
- Max. RPM (speed) / RCF: 6,000 rpm / 2000 x g
- Noise level: ≤50 dB(A)
- Power: AC 100-240V, 60/50Hz
- Dimensions in mm: 175 (D) x 148 (W) x 118 (H)
- Net weight: approx. 1.1 kg

Code | Description
--- | ---
BDE 8074000 | BOECO Mini Centrifuge M-6, EU Plug
BDE 8074100 | BOECO Mini Centrifuge M-6, US Plug
BDE 8074200 | BOECO Mini Centrifuge M-6, UK Plug

BOECO CENTRIFUGE MICROSPIN 12
is a compact bench-top microcentrifuge for medical and biological research, molecular diagnostics, biochemistry, immunology and cell technologies. It can be used for extracting RNA/DNA samples, separation of cell suspensions and other micro quantitative analysis.

The microprocessor control provides precise control of the set parameters and a user-friendly interface allows an easy entry of parameters.

The brushless motor provides quite, vibration free performance, even at high speeds and a long product service life.

The angle rotor is made out of aluminium.

Due to the low voltage external power supply, the Microspin 12 can be used in cold rooms.

Controls and displays
- During centrifugation the actual values of the parameters are indicated
- Entry of the running parameters via foil keypad
- Speed display in RPM or RCF
- RPM input from 200 to 10.000 in steps of 10, starting from 10.000 to the maximum speed in steps of 100
- RCF input from 200 to 10.000 in steps of 1, starting from 10.000 to the maximum speed in steps of 10
- Time min: 1 - 99 min. in steps of 1 min., Time disp: 1-59 sec. in steps of 1 sec., Continuous operation
- Brake stage, selectable between fast and slow
- Pulse key: For short centrifugation operations
- Emergency lid lock release
- Lid locking and holding device
- Motor overheating protection
- Imbalance switch-off
- Deep metal rotor chamber (die-cast aluminium) to securely accommodate the rotor

The Microspin 12 conforms to safety regulations such as IEC 61010 or the CE mark and all relevant EC standards and DIN norms and has been manufactured under ISO 9001:2008

Technical details
- Max. RPM (speed) / RCF: 13,300 rpm / 17,008 RCF
- Noise level: ≤58 dB(A)
- Emission / Immunity: EN / IEC 61326-1 class B / FCC class B
- Dimensions in mm: 228 (H) x 262 (W) x 352 (D)
- Net weight: approx. 11 kg

Code | Description
--- | ---
BDE 01203-13 | BOECO centrifuge MC-24, 208-240 V, 50-60 Hz, without rotor
BDE 01203-12 | BOECO centrifuge MC-24, 100-127 V, 50-60 Hz, without rotor

BOECO CENTRIFUGE MC-24
is a powerful, space-saving, low-noise, reliable and microprocessor-controlled microcentrifuge with brushless frequency drive.

Controls and displays
- During centrifugation the actual values of the parameters are indicated
- Entry of the running parameters via foil keypad
- Speed display in RPM or RCF
- RPM input from 200 to 10.000 in steps of 10, starting from 10.000 to the maximum speed in steps of 100
- RCF input from 200 to 10.000 in steps of 1, starting from 10.000 to the maximum speed in steps of 10
- Time min: 1 - 99 min. in steps of 1 min., Time disp: 1-59 sec. in steps of 1 sec., Continuous operation
- Brake stage, selectable between fast and slow
- Pulse key: For short centrifugation operations
- Rare with high adapter
- Emergency lid lock release
- Lid locking and holding device
- Motor overheating protection
- Imbalance switch-off
- Deep metal rotor chamber (die-cast aluminium) to securely accommodate the rotor

The MC-24 conforms to safety regulations such as IEC 61010 or the CE mark and all relevant EC standards and DIN norms and has been manufactured under ISO 9001:2008

Technical details
- Max. RPM (speed) / RCF: 13,300 rpm / 17,008 RCF
- Noise level: ≤58 dB(A)
- Emission / Immunity: EN / IEC 61326-1 class B / FCC class B
- Dimensions in mm: 228 (H) x 262 (W) x 352 (D)
- Net weight: approx. 11 kg

Code | Description
--- | ---
BDE 01213 | BOECO centrifuge MC-24, 100-127 V, 50-60 Hz, without rotor
BOECO CENTRIFUGES M-240 / M-240R

The M-240 and M-240R rank among the fastest centrifuges in their class – with a maximum speed of 15,000 rpm and an RCF of 21,382. Not only are they fast, the M-240R also refrigerates quickly, to +4°C with the Fast Cool function in 10 to 15 minutes. Even thermosensitive samples can be gently centrifuged thanks to highly reliable refrigeration. Best separation results are guaranteed with the smooth-running, high-performance motor featuring a maintenance-free frequency drive. With the optional autoclavable and aerosol-tight accessories, even infectious materials can be processed safely for both the user and the environment.

User-Friendliness
- Automatic lid locking
- Quick-entry foil keypad
- Easy-to-read, digital display
- Display of current parameter values
- Select key for parameter selection
- Impulse key for short centrifuging
- Open lid key
- RCF key
- Twist knob to enter values
- RPM in increments of 10
- Running time in minutes, max. 99 min
- Temperature in increments of 1°C (M-240R)
- 4 programmable memories

Refrigeration (M-240R)
- Infinitely variable setting from –10 °C to +40 °C
- Fast Cool function in 10 - 15 min to +4 °C
- Stand-by mode maintains the set temperature
- Automatic refrigeration switch-off when the lid is opened

Safety
- Lid dropping protection
- Lid locking and holding
- Emergency lid lock release
- Motor overheating protection
- Chamber overheating protection
- Imbalance switch-off
- Standstill indication
- with the refrigerated model M-240R the LED in the Open key lights up with the M-240 the lid opens automatically after the rotor has come to a standstill

The M-240 / M-240R conform to safety regulations such as IEC 61326, all relevant EC standards and DIN norms and have been manufactured under ISO 9001:2008

Technical details

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>M-240</th>
<th>M-240R</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOE 02400-13</td>
<td>BOECO centrifuge M-240, 200-240 V, 50-60 Hz, without rotor,</td>
<td>Max. RPM (speed) / RCF: 15,000 RPM / 21,382 RCF</td>
<td>Noise level: ≤ 59 dB (A) ≤ 52 dB(A)</td>
</tr>
<tr>
<td>BOE 02400-12</td>
<td>BOECO centrifuge M-240, 100-127 V, 50-60 Hz, without rotor,</td>
<td>Dimensions in mm (HxWxD): 260 x 275 x 344</td>
<td>260 x 281 x 533</td>
</tr>
<tr>
<td>BOE 02405-13</td>
<td>BOECO refrigerated centrifuge M-240R, 200-240 V, 50 Hz, without rotor,</td>
<td>approx. 11.5 kg</td>
<td>28 kg</td>
</tr>
<tr>
<td>BOE 02405-12</td>
<td>BOECO refrigerated centrifuge M-240R, 100-127 V, 50-60 Hz, without rotor,</td>
<td>Emission / Immunity: EN / IEC 61326-1 / class B / FCC class B</td>
<td></td>
</tr>
</tbody>
</table>

The special raised rim of the rotor 02428 enables centrifugation of tubes with open lids. The rim supports the lids so they will not rip off during centrifugation.

Centrifugation with open tube lids is performed for example when spinning tubes with filter elements, so called „spin columns“.

BoE Co CEntriFugEs m-240 / m-240r

Dimensions in mm (HxWxD): 260 x 275 x 344 260 x 281 x 533 (dependent on rotor)

Infinitely variable setting from –10 °C to +40 °C

Max. RPM (speed) / RCF: 15,000 RPM / 21,382 RCF

Noise level: ≤ 59 dB (A) ≤ 52 dB(A)

Certified according to the standards UL 1950, EN 60950 and the safety regulations IEC 61326. The rotational speed of the rotor is displayed directly on the display. The lid opens automatically after the rotor has come to a standstill.

The M-240 / M-240R are designed in such a way that they can be loaded and unloaded without having to move the rotor. The lid is opened automatically after the rotor has come to a standstill. The LED in the Open key lights up.

For more information about all accessories, please refer to the manuals of the M-240 and M-240R.

For the M-240R accessory for cryo tubes with bio-containment autoclavable phenol-resistant:

Cat.-No. 02424B

Angle rotor, 24-place
Cat. No. 02424B

n= 15,000 min –1
max RCF 21,382
List OE3243 incl.

Optional Lid (Cat. No. 02433) with bio-containment autoclavable phenol-resistant

Lid (Cat. No. 02424) for cryo tubes
Cat. No. 02430

RCF 20,376

List OE3243 incl.

40°

Angle rotor, 30-place
Cat. No. 02427A

n= 15,000 min –1
max RCF 21,130
List OE3243 incl.

Optional for rotor 02428B, 02430B, 02432B and 02437A

The special raised rim of the rotor 02428 enables centrifugation of tubes with open lids. The rim supports the lids so they will not rip off during centrifugation.

Centrifugation with open tube lids is performed for example when spinning tubes with filter elements, so called „spin columns“.

For more information about all accessories, please refer to the manuals of the M-240 and M-240R.

For the M-240R accessory for cryo tubes with bio-containment autoclavable phenol-resistant:

Cat.-No. 02424B

Angle rotor, 24-place
Cat. No. 02424B

n= 15,000 min –1
max RCF 21,382
List OE3243 incl.

Optional Lid (Cat. No. 02433) with bio-containment autoclavable phenol-resistant

Lid (Cat. No. 02424) for cryo tubes
Cat. No. 02430

RCF 20,376

List OE3243 incl.

40°

Angle rotor, 30-place
Cat. No. 02427A

n= 15,000 min –1
max RCF 21,130
List OE3243 incl.

Optional for rotor 02428B, 02430B, 02432B and 02437A

The special raised rim of the rotor 02428 enables centrifugation of tubes with open lids. The rim supports the lids so they will not rip off during centrifugation.

Centrifugation with open tube lids is performed for example when spinning tubes with filter elements, so called „spin columns“.

For more information about all accessories, please refer to the manuals of the M-240 and M-240R.

For the M-240R accessory for cryo tubes with bio-containment autoclavable phenol-resistant:

Cat.-No. 02424B

Angle rotor, 24-place
Cat. No. 02424B

n= 15,000 min –1
max RCF 21,382
List OE3243 incl.

Optional Lid (Cat. No. 02433) with bio-containment autoclavable phenol-resistant

Lid (Cat. No. 02424) for cryo tubes
Cat. No. 02430

RCF 20,376

List OE3243 incl.

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Angle rotor, 30-place
Cat. No. 02427A

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The special raised rim of the rotor 02428 enables centrifugation of tubes with open lids. The rim supports the lids so they will not rip off during centrifugation.

Centrifugation with open tube lids is performed for example when spinning tubes with filter elements, so called „spin columns“.

For more information about all accessories, please refer to the manuals of the M-240 and M-240R.

For the M-240R accessory for cryo tubes with bio-containment autoclavable phenol-resistant:

Cat.-No. 02424B

Angle rotor, 24-place
Cat. No. 02424B

n= 15,000 min –1
max RCF 21,382
List OE3243 incl.

Optional Lid (Cat. No. 02433) with bio-containment autoclavable phenol-resistant

Lid (Cat. No. 02424) for cryo tubes
Cat. No. 02430

RCF 20,376

List OE3243 incl.
BOECO CENTRIFUGES U-320 / U-320 R

Because of their comprehensive range of accessories, the U-320 and U-320R centrifuges are the perfect universal centrifuges for routines in basic research and R&D laboratories of the pharmaceutical and biotechnical industry. The microprocessor controlled centrifuges have a brushless frequency drive (no carbon brushes) and a motorized lid locking.

**Performance**
- High RCF
- Extremely short run-up and run-down times

**Design**
- Metal housing, metal lid
- Stainless steel centrifuging chamber
- Viewing port in the lid

**Refrigeration (U-320R)**
- Infinitely variable setting from -20 °C to +40 °C
- Fast cool function

**User-Friendliness**
- Automatic lid locking
- Emergency lid lock release
- Easily exchangeable rotors
- 10 programmable memories
- 9 acceleration and braking ramps, or unbraked run down time

**Safety**
- Lid locking and holding during rotor run
- Emergency lid lock release
- Motor overheating protection
- Chamber overheating protection (with U-320R)
- Imbalance switch-off
- Automatic rotor recognition
- Lid dropping protection

**Controls and displays**
- During centrifugation the actual values of the parameters are indicated
- Change-over RPM/RCF: by entering the rotor radius r/mm the Centrifuge will calculate/indicate speed or RCF.
- Time preselection in steps of minutes and seconds / continuous operation
- Temperature T/°C: Input in increments of 1°C
- Impulse key: For short centrifugation operations

The U-320 / U-320R conform to safety regulations such as IEC 61010 or the CE mark and all relevant EC standards and DIN norms and have been manufactured under ISO 9001:2008.

**Technical details**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>U-320</th>
<th>U-320 R</th>
</tr>
</thead>
<tbody>
<tr>
<td>01401-13</td>
<td>BOECO centrifuge U-320, 200-240 V, 50-60 Hz, without rotor</td>
<td>15,000 RPM / 21,382 RCF</td>
<td>≤ 68 dB (A) / ≤ 58 dB(A)</td>
</tr>
<tr>
<td>01401-12</td>
<td>BOECO centrifuge U-320, 100-127 V, 50-60 Hz, without rotor</td>
<td>15,000 RPM / 21,382 RCF</td>
<td>≤ 68 dB (A) / ≤ 58 dB(A)</td>
</tr>
<tr>
<td>01406-13</td>
<td>BOECO refrigerated centrifuge U-320R, 200-240 V, 50-60 Hz, without rotor</td>
<td>15,000 RPM / 21,382 RCF</td>
<td>≤ 68 dB (A) / ≤ 58 dB(A)</td>
</tr>
<tr>
<td>01406-12</td>
<td>BOECO refrigerated centrifuge U-320R, 115-127 V, 60 Hz, without rotor</td>
<td>15,000 RPM / 21,382 RCF</td>
<td>≤ 68 dB (A) / ≤ 58 dB(A)</td>
</tr>
</tbody>
</table>

**Code Description**

- **Emission / Immunity:** EN IEC 61326-1, class B / FCC Class B

**Dimensions in mm (HxWxD):**

- 68 CEntriFugEs
- Dimensions in mm (HxWxD): 346 x 395 x 520 / 346 x 401 x 695

**Noise level:**
- High RCF A

- **Frequency drive (no carbon brushes) and a motorized lid locking.**

- **Industry.** The microprocessor controlled centrifuges have a brushless A

- **Temperature T/°C Input in increments of 1°C**

- **Impulse key: For short centrifugation operations**

- **The U-320 / U-320R conform to safety regulations such as IEC 61010 or the CE mark and all relevant EC standards and DIN norms and have been manufactured under ISO 9001:2008**

- **Technical details**

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</tbody>
</table>
### Swing-out rotor, 4-place, 01462 illustrated with adapters 01461 and sets 1-6

<table>
<thead>
<tr>
<th>Cat.-No.</th>
<th>Max. tubes</th>
<th>n, min⁻¹</th>
<th>RCF</th>
<th>max. permissible rCF</th>
</tr>
</thead>
<tbody>
<tr>
<td>01461</td>
<td>4</td>
<td>4,500</td>
<td>16,582</td>
<td>4,193</td>
</tr>
<tr>
<td>01463</td>
<td>6</td>
<td>4,500</td>
<td>9,056</td>
<td>4,930</td>
</tr>
<tr>
<td>01464</td>
<td>12</td>
<td>4,500</td>
<td>4,109</td>
<td>4,193</td>
</tr>
</tbody>
</table>

### Angle rotor, Cat. No. 01615

<table>
<thead>
<tr>
<th>Cat.-No.</th>
<th>Max. tubes</th>
<th>n, min⁻¹</th>
<th>RCF</th>
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</tr>
</thead>
<tbody>
<tr>
<td>01615</td>
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<td>12,000</td>
<td>16,582</td>
<td>4,193</td>
</tr>
</tbody>
</table>

### Angle rotor, 6-place, 01460A illustrated with adapter set 01646

<table>
<thead>
<tr>
<th>Cat.-No.</th>
<th>Max. tubes</th>
<th>n, min⁻¹</th>
<th>RCF</th>
<th>max. permissible rCF</th>
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<tr>
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### Angle rotor, 6-place, 01461 illustrated with adapter set 01646

<table>
<thead>
<tr>
<th>Cat.-No.</th>
<th>Max. tubes</th>
<th>n, min⁻¹</th>
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<td>01461</td>
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</tr>
</tbody>
</table>

### Swing-out rotor, 6-place, No. 01398 and 01482 illustrated with adapter set 01646

<table>
<thead>
<tr>
<th>Cat.-No.</th>
<th>Max. tubes</th>
<th>n, min⁻¹</th>
<th>RCF</th>
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</thead>
<tbody>
<tr>
<td>01480</td>
<td>6</td>
<td>4,500</td>
<td>4,146</td>
<td>4,193</td>
</tr>
</tbody>
</table>

### Swing-out rotor, 8-place, No. 01398 and 01482 for 8 x 50/15 ml, stainless steel, with suspensions.

<table>
<thead>
<tr>
<th>Cat.-No.</th>
<th>Max. tubes</th>
<th>n, min⁻¹</th>
<th>RCF</th>
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<tbody>
<tr>
<td>01482</td>
<td>8</td>
<td>4,000</td>
<td>4,146</td>
<td>4,193</td>
</tr>
</tbody>
</table>

### Swing-out rotor, 8-place, No. 01398 and 01482 for 8 x 50/15 ml, stainless steel, with suspensions No. 01644, PA, fibreglass reinforced.

<table>
<thead>
<tr>
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<th>n, min⁻¹</th>
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<tbody>
<tr>
<td>01489</td>
<td>8</td>
<td>4,500</td>
<td>4,146</td>
<td>4,193</td>
</tr>
</tbody>
</table>

### Angle rotor, 6-place, 01461 illustrated with adapter set 01646.

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</tbody>
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### Angle rotor, 6-place, 01461 illustrated with adapter set 01646.

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<td>4,146</td>
<td>4,193</td>
</tr>
</tbody>
</table>
Laboratory Equipment

Swing-out rotor, 2-place, n=4,000 min⁻¹, RCF 2,188.
- For microtitre plates, aluminium coated, with suspensions No. 01453A, stainless steel.

Angle rotor, Cat. No. 01689A
- 30-place, n=14,000 min⁻¹, max RCF 21,255
- Optional for rotor 01420

Cyto rotor, 6-place, aluminium coated with cyto suspensions, suitable for U-320 and U-320R, more information is available in a detailed cyto brochure.

1) Lowest attainable temp. in precooled refrigerated centrifuges at max. speed
2) Rund down in sec. braked

Please make sure not to exceed the tubes max. permissible RCF.
For glass tubes the max RCF is 4,000