Thermo Fisher SCIENTIFIC

Centrifuges

# Powerful at every turn

## Sorvall X Pro and ST Plus General Purpose Centrifuge Series

thermo scientific

# Sorvall X Pro and ST Plus Centrifuge Series

## Performance, power and versatility

Thermo Scientific™ Sorvall™ X Pro and ST Plus General Purpose Centrifuges are designed to help provide exceptional performance, power and versatility through innovations to support efficiency across applications.

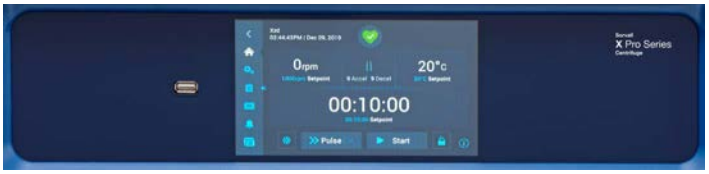
With fixed-angle rotor RCF (Relative Centrifugal Force) of over 25,000 x g, and swinging bucket rotor RCF of over 7,000 x g, even the toughest separations can be completed.

Scientists working across biopharmaceutical, academic research and clinical diagnostic applications can choose between ventilated or refrigerated 1.6 L (4 x 400 ml) and 4 L (4 x 1,000 ml) floor and bench models.

## Features and benefits

- Intuitive user interface
- Wide range of rotors for application flexibility
- Thermo Scientific™ Auto-Lock™ Rotor Exchange
- Energy efficiency
- Improved ergonomics and user experience
- Optional (Pro series): Connectivity, sample tracking software
- Thermo Scientific™ ClickSeal™ Biocontainment Lids
- IVD, general purpose or Cell Therapy Systems (CTS™) Series models

# User interface




Sorvall X Pro touchscreen interface

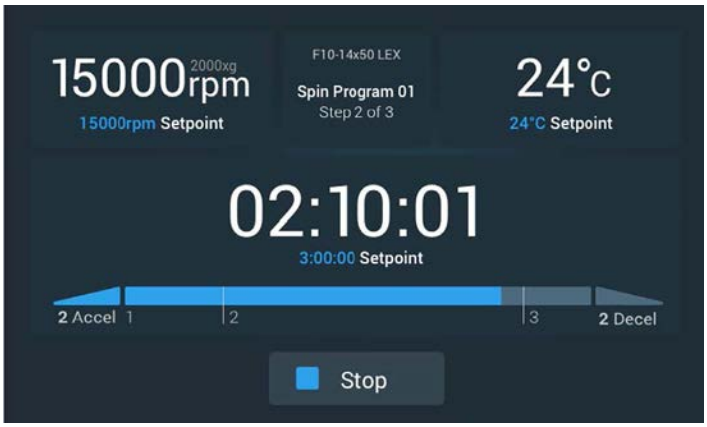
Sorvall ST Plus user interface

## Simple touchscreen programming

**Discover the Sorvall X Pro touchscreen features including:**

- Easily accessible menu bar
- Centrifuge health icon for at-a-glance monitoring
- Time-saving pre-temp button
- Quick spins
- Useful information icon for additional support
- Thermo Scientific™ Accumulated Centrifugal Effect (ACE™) integrator function for increased reproducibility
- Lighthouse mode to easily monitor your run progress and program end-of-run alerts

Simple touchscreen programming




Lighthouse mode

# Rotor exchange

## Thermo Scientific™ Auto-Lock™ Rotor Exchange

**Helps save time for fast results:**

- Secure, ergonomic push-button rotor exchange in as little as three seconds
- Trouble-free installation and removal with no tools required
- Full chamber access for cleaning convenience and helps minimize the risk of contamination
- Flexibility to quickly switch between applications and evolve with changing laboratory needs

# Safety and ergonomics

Improved safety with reduced pinch-points designed to help prevent accidental injury. Motorized gas springs with safety protection.

Efficiently and ergonomically close with one hand at the hand grip cue

Accessory tray holds tools or samples as you prepare for your run.

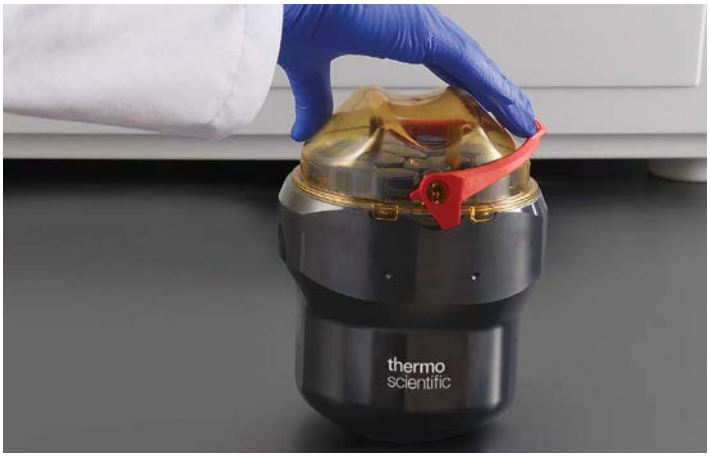
Front USB port for easier plug in and data transfer

# Biocontainment lids

## Thermo Scientific™ ClickSeal™ Biocontainment Lids

### One-handed sample protection

- Biocontainment sealing options for glove-friendly, one-handed open/close capability are ergonomically designed for both right and left-handed operations
- Easy operation for all laboratory users, eliminating multi-turn screw caps and complicated high pressure clips
- Biocontainment certification by National Institute for Health Protection, Porton Down, UK or TÜV NORD CERT GmbH, Germany
- Audible and visual closure cues enhance safety and security



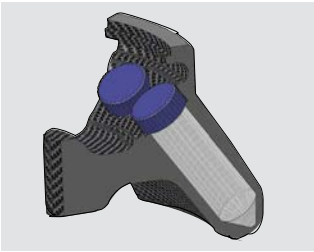
# Rotor versatility and carbon fiber technology

## Thermo Scientific™ Fiberlite™ Carbon Fiber Rotors

### Excellent ergonomics and enhanced performance

- Fiberlite™ rotor/lid combinations offer protection to the user, the centrifuge and the samples during centrifugation
- Outstanding durability provided by carbon fiber construction is supported by a 15 year Fiberlite rotor warranty and no limitation in cycles of use
- Carbon fiber offers a unique ability to mold each cavity to form fit disposable conical tubes, bottles and other consumables, enabling high g-force spins for tougher separations[1] and hybrid superspeed capabilities in a general purpose centrifuge
- Excellent ergonomics driven by lightweight construction, integrated handle design and Auto-Lock rotor exchange

| Centrifuge models | Unique rotor options | Fiberlite options |
|---|---|---|
| Sorvall X4,X4R, X4F, X4FR (Pro) | 18 | 7 |
| Sorvall ST4, ST4R, ST4F, ST4FR (Plus) | 13 | 3 |
| Sorvall X1, X1R (Pro) | 17 | 5 |
| Sorvall ST1, ST1R (Plus) | 15 | 3 |



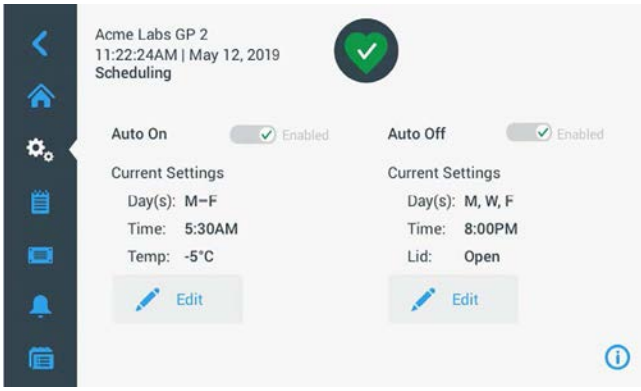
Fiberlite rotor cavities are molded to the exact shape of many disposable conical tubes for maximum support; 50 mL conical tube shown here. In addition, a cap support is designed to relieve high g-forces.

# Energy efficiency

## Scheduling features and carbon fiber rotors help save energy

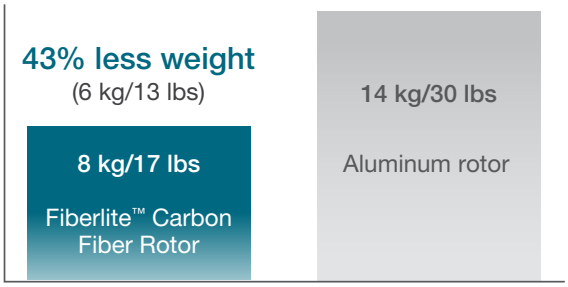
### Make your lab more sustainable by saving energy

- Scheduling capability promotes energy savings and enables pre-programmed start-up of compressor for temperature-ready centrifuge as soon as you arrive in the lab
- Green compressor on/off feature with shut-down programming can extend compressor life and reduce energy costs
- Fiberlite rotors weigh up to 60% less than metal equivalent rotors and therefore help accelerate/decelerate faster, helping reduce energy consumption per run[2]




**Less weight of carbon fiber rotors:**

Weight comparison of fully loaded 6 x 250 mL capacity floor model rotors




Rotor weight

[1] Compared to metal rotors.

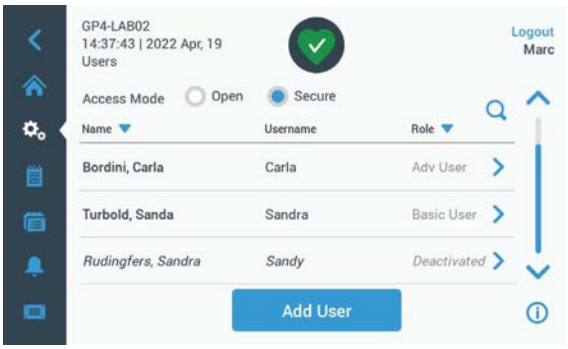
[2] For additional detail, view Green Fact Sheet from 2023 at https://assets.thermofisher.com/TFS-Assets/LPD/Product-Information/PG2030-PJT4622-COL33722-Centrifuges-FactSheet-Americas-FHR.pdf

# Connectivity and data management

## Thermo Scientific™ SECURE-Spin™ Mode

**Match the centrifuges to your compliance and sample tracking needs**

- Enables advanced and secure control features in the **X Pro centrifuges** by enabling 21 CFR Part 11 data management compliance and traceability
- Assign user rights and create up to 120 users profiles
- Traceable documentation provides audit trail for setting and program changes
- Compatible with Thermo Scientific™ Centri-Log™ Plus Data Management Software



# Models for cell therapy manufacturing needs

## Thermo Scientific™ General Purpose Pro Centrifuge CTS™ Series

**Product and documentation package for cell therapy research and manufacturing needs**

The General Purpose Pro Centrifuges Cell Therapy Systems Series consists of our popular Pro centrifuge models (4 L), extensive documentation, and certifications. Our compliance services support your Good Manufacturing Practice (GMP) needs.

The CTS Series helps you get up and running fast, stay compliant, navigate regulatory audits, and stay on schedule as you take your cell therapy from discovery to clinical research and commercial manufacturing.

Learn more at **thermofisher.com/ctscentrifuges**

Product | Documentation package | Compliance services

# Sorvall X4 and X4R Pro Centrifuges

## 4 L Benchtop centrifuges (Pro series): specifications and ordering information

| Specifications | Sorvall X4 Pro | | Sorvall X4R Pro | |
|---|---|---|---|---|
| | IVD | General Use Only | IVD | General Use Only |
| **Swinging buckets rotors** | | | | |
| Maximum capacity | 4 x 1,000 mL with TX-1000 rotor | | | |
| Maximum speed | 6,100 rpm with H-Flex HS4 rotor | | | |
| Maximum RCF | 7,197 x g with H-Flex HS4 rotor | | | |
| **Fixed angle rotors** | | | | |
| Maximum capacity | 6 x 250 mL with F14-6x250LE rotor | | | |
| Maximum speed | 15,200 rpm with F21-48x2, Microliter 48x2 or Microliter 30x2 | | | |
| Maximum RCF | 25,830 x g with Microliter 30x2 | | | |
| **Centrifuge details** | | | | |
| Control system | Microprocessor | | | |
| Drive system | Direct, brushless induction low profile motor | | | |
| Accel/decel profiles | Choices of 9 accel / 10 decel rates | | | |
| Material | Front, top, sides: PC-ABS plastic painted with 2K PUR-based lacquer; metal housing: cold rolled steel with powder paint; centrifuge bowl: stainless steel; centrifuge feet: rubber | | | |
| Safety features | SMARTSpin Imbalance detection, finger-pinch prevention, crash-proof construction | | | |
| Warranty | 5 years limited (2 years standard warranty + 3 additional years on motor and refrigeration) | | | |
| Includes | Printed English user manual, USB stick with 28 languages of user manual, corrosion resistance oil (70009824), power cord, declaration of conformity | | | |
| Temperature range | N/A | | -10°C to +40°C | |
| Number of compatible rotors | 18 | | 18 | |
| **Display details** | | | | |
| Display | Full color touch screen interface | | | |
| Run time | Max 99h, 59min, 59sec; also with continuous and customizable pulse | | | |
| Speed | Increments of 1 rpm / 1 x g | | | |
| Timer | Count up or down in increments of 1 second | | | |
| Temperature | N/A | | Sample temperature in increments of 1 degree | |
| Program storage | Up to 100 run programs with step programming | | | |
| Programmability | Via easy access touch screen menu | | | |
| **Dimensions, weight** | | | | |
| Width (inches) exterior | 22.3 | | 29.4 | |
| Width (cm) exterior | 56.6 | | 74.6 | |
| Depth (inches) exterior | 27.2 | | 27.2 | |
| Depth (cm) exterior | 69.0 | | 69.0 | |
| Height (inches) exterior | 14.3 | | 14.2 | |
| Height (cm) exterior | 36.2 | | 36.1 | |
| Height (inches) open cover | 33.9 | | 33.9 | |
| Height (cm) open cover | 86.1 | | 86.0 | |
| Footprint dimensions (inches) | 22.3 x 23.1 | | 29.4 x 23.0 | |
| Footprint dimensions (cm) | 56.6 x 58.8 | | 74.6 x 58.4 | |
| Net weight (lbs) | 196 | | 265 | |
| Net weight (kgs) | 89 | | 120 | |
| **Certifications and standards** | | | | |
| IVD/MD | √ | | √ | |
| Certifications | EN/UL/IEC 61010-1, EN/UL/IEC 61010-2-020 and 61010-2-101, EN/UL/IEC 61326-1, EN/UL/IEC 61326-2-6, FCC part 15 | | | |
| Standards | ISO 14971, ISO 13485, ISO 9001 | | | |
| Cleanroom compatibility | Class ISO 7 according to DIN EN ISO 14644-1 | | | |
| **Ordering information** | **Sorvall X4 Pro** | | **Sorvall X4R Pro** | |
| | IVD | General Use Only | IVD | General Use Only |
| 230V§ | 75009505* | 75009905 | 75009520* / 75009620*§ | 75009920 / 75009820§ |
| 120V | 75009506* | N/A | 75009521* | N/A |
| 100V | 75009507* | 75009907 | 75009522* | 75009922 |

*Indicates a centrifuge, rotor and/or adapter product approved for use in clinical applications; see user manual for details.
§ 220V / 60 Hz [Korea, etc.]

# Sorvall ST4 and ST4R Plus Centrifuges

## 4 L Benchtop centrifuges (Plus series): specifications and ordering information

| Specifications | Sorvall ST4 Plus | | Sorvall ST4R Plus | |
|---|---|---|---|---|
| | IVD | General Use Only | IVD | General Use Only |
| **Swinging buckets rotors** | | | | |
| Maximum capacity | 4 x 1,000 mL with TX-1000 rotor | | | |
| Maximum speed | 6,100 rpm with H-Flex HS4 rotor | | | |
| Maximum RCF | 7,197 x g with H-Flex HS4 rotor | | | |
| **Fixed angle rotors** | | | | |
| Maximum capacity | 6 x 100 mL with F15-6x100y or F10-6x100 LEX rotor | | | |
| Maximum speed | 15,200 rpm with F21-48x2, Microliter 48x2 or Microliter 30x2 | | | |
| Maximum RCF | 25,830 x g with Microliter 30x2 | | | |
| **Centrifuge details** | | | | |
| Control system | Microprocessor | | | |
| Drive system | Direct, brushless induction low profile motor | | | |
| Accel/decel profiles | Choices of 9 accel / 10 decel rates | | | |
| Material | Front, top, sides: PC-ABS plastic painted with 2K PUR-based lacquer; metal housing: cold rolled steel with powder paint; centrifuge bowl: stainless steel; centrifuge feet: rubber | | | |
| Safety features | SMARTSpin imbalance detection, finger-pinch prevention, crash-proof construction | | | |
| Warranty | 5 years limited (2 years standard warranty + 3 additional years on motor and refrigeration) | | | |
| Includes | Printed English user manual, USB stick with 28 languages of user manual, corrosion resistance oil (70009824), power cord, declaration of conformity | | | |
| Temperature range | N/A | | -10°C to +40°C | |
| Number of compatible rotors | 13 | | 13 | |
| **Display details** | | | | |
| Display | Push button and high contrast LCD interface | | | |
| Run time | Max 9h, 59min; also with continuous and pulse modes | | | |
| Speed | Increments of 50 rpm / 50 x g | | | |
| Timer | Count down only in increments of 1 second (from 9 min 59 seconds) and in increments of 1 minute (>10 min) | | | |
| Temperature | N/A | | Sample temperature in increments of 1 degree | |
| Program storage | Up to 6 run programs | | | |
| Programmability | Via 6 direct access buttons | | | |
| **Dimensions, weight** | | | | |
| Width (inches) exterior | 22.3 | | 29.4 | |
| Width (cm) exterior | 56.6 | | 74.6 | |
| Depth (inches) exterior | 27.2 | | 27.2 | |
| Depth (cm) exterior | 69.0 | | 69.0 | |
| Height (inches) exterior | 14.3 | | 14.2 | |
| Height (cm) exterior | 36.2 | | 36.1 | |
| Height (inches) open cover | 33.9 | | 33.9 | |
| Height (cm) open cover | 86.1 | | 86.0 | |
| Footprint dimensions (inches) | 22.3 x 23.1 | | 29.4 x 23.0 | |
| Footprint dimensions (cm) | 56.6 x 58.8 | | 74.6 x 58.4 | |
| Net weight (lbs) | 196 | | 265 | |
| Net weight (kgs) | 89 | | 120 | |
| **Certifications and standards** | | | | |
| IVD/MD | √ | | √ | |
| Certifications | EN/UL/IEC 61010-1, EN/UL/IEC 61010-2-020 and 61010-2-101, EN/UL/IEC 61326-1, EN/UL/IEC 61326-2-6, FCC part 15 | | | |
| Standards | ISO 14971, ISO 13485, ISO 9001 | | | |
| Cleanroom compatibility | Class ISO 7 according to DIN EN ISO 14644-1 | | | |

| Ordering information | Sorvall ST4 Plus | | Sorvall ST4R Plus | |
|---|---|---|---|---|
| | IVD | General Use Only | IVD | General Use Only |
| 230V§ | 75009509* | 75009909 | 75009524* / 75009624*§ | 75009924 / 75009824§ |
| 120V | 75009510* | N/A | 75009525* | N/A |
| 100V | 75009511* | 75009911 | 75009526* | 75009926 |

*Indicates a centrifuge, rotor and/or adapter product approved for use in clinical applications; see user manual for details.
§ 220V / 60 Hz [Korea, etc.]

# Sorvall X4F and X4FR Pro Centrifuges

## 4 L Floor model centrifuges (Pro series): specifications and ordering information

| Specifications | Sorvall X4F Pro | | Sorvall X4FR Pro | |
|---|---|---|---|---|
| | IVD | General Use Only | IVD | General Use Only |
| **Swinging buckets rotors** | | | | |
| Maximum capacity | 4 x 1,000 mL with TX-1000 rotor | | | |
| Maximum speed | 6,100 rpm with H-Flex HS4 rotor | | | |
| Maximum RCF | 7,197 x g with H-Flex HS4 rotor | | | |
| **Fixed angle rotors** | | | | |
| Maximum capacity | 6 x 250 mL with F14-6x250LE rotor | | | |
| Maximum speed | 15,200 rpm with F21-48x2, Microliter 48x2 or Microliter 30x2 | | | |
| Maximum RCF | 25,830 x g with Microliter 30x2 | | | |
| **Centrifuge details** | | | | |
| Control system | Microprocessor | | | |
| Drive system | Direct, brushless induction low profile motor | | | |
| Accel/decel profiles | Choices of 9 accel / 10 decel rates | | | |
| Material | Front, top, sides: PC-ABS plastic painted with 2K PUR-based lacquer; metal housing: cold rolled steel with powder paint; centrifuge bowl: stainless steel; centrifuge feet: lockable casters | | | |
| Safety features | SMARTSpin imbalance detection, finger-pinch prevention, crash-proof construction | | | |
| Warranty | 5 years limited (2 years standard warranty + 3 additional years on motor and refrigeration) | | | |
| Includes | Printed English user manual, USB stick with 28 languages of user manual, corrosion resistance oil (70009824), power cord, declaration of conformity | | | |
| Temperature range | N/A | | -10°C to +40°C | |
| Number of compatible rotors | 18 | | 18 | |
| **Display details** | | | | |
| Display | Full color touch screen interface | | | |
| Run time | Max 99h, 59min, 59sec; also with continuous and customizable pulse | | | |
| Speed | Increments of 1 rpm / 1 x g | | | |
| Timer | Count up or down in increments of 1 second | | | |
| Temperature | N/A | | Sample temperature in increments of 1 degree | |
| Program storage | Up to 100 run programs with step programming | | | |
| Programmability | Via easy access touch screen menu | | | |
| **Dimensions, weight** | | | | |
| Width (inches) exterior | 22.3 | | 22.3 | |
| Width (cm) exterior | 56.6 | | 56.6 | |
| Depth (inches) exterior | 27.2 | | 27.2 | |
| Depth (cm) exterior | 69.0 | | 69.0 | |
| Height (inches) exterior | 32.8 | | 32.8 | |
| Height (cm) exterior | 83.5 | | 83.5 | |
| Height (inches) open cover | 54.1 | | 54.1 | |
| Height (cm) open cover | 135 | | 135 | |
| Footprint dimensions (inches) | 22.3 x 23.1 | | 22.3 x 23.0 | |
| Footprint dimensions (cm) | 56.6 x 58.8 | | 56.6 x 58.4 | |
| Net weight (lbs) | 335 | | 319 | |
| Net weight (kgs) | 152 | | 145 | |
| **Certifications and standards** | | | | |
| IVD/MD | √ | | √ | |
| Certifications | EN/UL/IEC 61010-1, EN/UL/IEC 61010-2-020 and 61010-2-101, EN/UL/IEC 61326-1, EN/UL/IEC 61326-2-6, FCC part 15 | | | |
| Standards | ISO 14971, ISO 13485, ISO 9001 | | | |
| Cleanroom compatibility | Class ISO 7 according to DIN EN ISO 14644-1 | | | |

| Ordering information | Sorvall X4F Pro | | Sorvall X4FR Pro | |
|---|---|---|---|---|
| | IVD | General Use Only | IVD | General Use Only |
| 230V§ | 75009532* | 75009932 | 75009541* / 75009026*§ | 75009941 / 75009027§ |
| 120V | 75009533* | N/A | 75009539* | N/A |
| 100V | 75009534* | 75009934 | 75009540* | 75009940 |

*Indicates a centrifuge, rotor and/or adapter product approved for use in clinical applications; see user manual for details.
§ 220V / 60 Hz [Korea, etc.]

# Sorvall ST4F and ST4FR Plus Centrifuges

## 4 L Floor model centrifuges (Plus series): specifications and ordering information

| Specifications | Sorvall ST4F Plus | | Sorvall ST4FR Plus | |
|---|---|---|---|---|
| | IVD | General Use Only | IVD | General Use Only |
| **Swinging buckets rotors** | | | | |
| Maximum capacity | 4 x 1,000 mL with TX-1000 rotor | | | |
| Maximum speed | 6,100 rpm with H-Flex HS4 rotor | | | |
| Maximum RCF | 7,197 x g with H-Flex HS4 rotor | | | |
| **Fixed angle rotors** | | | | |
| Maximum capacity | 6 x 100 mL with F15-6x100y or F10-6x100 LEX rotor | | | |
| Maximum speed | 15,200 rpm with F21-48x2, Microliter 48x2 or Microliter 30x2 | | | |
| Maximum RCF | 25,830 x g with Microliter 30x2 | | | |
| **Centrifuge details** | | | | |
| Control system | Microprocessor | | | |
| Drive system | Direct, brushless induction low profile motor | | | |
| Accel/decel profiles | Choices of 9 accel / 10 decel rates | | | |
| Material | Front, top, sides: PC-ABS plastic painted with 2K PUR-based lacquer; metal housing: cold rolled steel with powder paint; centrifuge bowl: stainless steel; centrifuge feet: lockable casters | | | |
| Safety features | SMARTSpin imbalance detection, finger-pinch prevention, crash-proof construction | | | |
| Warranty | 5 years limited (2 years standard warranty + 3 additional years on motor and refrigeration) | | | |
| Includes | Printed English user manual, USB stick with 28 languages of user manual, corrosion resistance oil (70009824), power cord, declaration of conformity | | | |
| Temperature range | N/A | | -10°C to +40°C | |
| Number of compatible rotors | 13 | | 13 | |
| **Display details** | | | | |
| Display | Push button and high contrast LCD interface | | | |
| Run time | Max 9h, 59min; also with continuous and pulse modes | | | |
| Speed | Increments of 50 rpm / 50 x g | | | |
| Timer | Count down only in increments of 1 second (from 9 min 59 seconds) and in increments of 1 minute (>10 min) | | | |
| Temperature | N/A | | Sample temperature in increments of 1 degree | |
| Program storage | Up to 6 run programs | | | |
| Programmability | Via 6 direct access buttons | | | |
| **Dimensions, weight** | | | | |
| Width (inches) exterior | 22.3 | | 22.3 | |
| Width (cm) exterior | 56.6 | | 56.6 | |
| Depth (inches) exterior | 27.2 | | 27.2 | |
| Depth (cm) exterior | 69.0 | | 69.0 | |
| Height (inches) exterior | 32.8 | | 32.8 | |
| Height (cm) exterior | 83.5 | | 83.5 | |
| Height (inches) open cover | 54.1 | | 54.1 | |
| Height (cm) open cover | 135 | | 135 | |
| Footprint dimensions (inches) | 22.3 x 23.1 | | 22.3 x 23.0 | |
| Footprint dimensions (cm) | 56.6 x 58.8 | | 56.6 x 58.4 | |
| Net weight (lbs) | 335 | | 319 | |
| Net weight (kgs) | 152 | | 145 | |
| **Certifications and standards** | | | | |
| IVD/MD | √ | | √ | |
| Certifications | EN/UL/IEC 61010-1, EN/UL/IEC 61010-2-020 and 61010-2-101, EN/UL/IEC 61326-1, EN/UL/IEC 61326-2-6, FCC part 15 | | | |
| Standards | ISO 14971, ISO 13485, ISO 9001 | | | |
| Cleanroom compatibility | Class ISO 7 according to DIN EN ISO 14644-1 | | | |

| Ordering information | Sorvall ST4F Plus | | Sorvall ST4FR Plus | |
|---|---|---|---|---|
| | IVD | General Use Only | IVD | General Use Only |
| 230V§ | 75009982* | 75009956 | 75009985* / 75009024*§ | 75009959 / 75009025§ |
| 120V | 75009981* | N/A | 75009984* | N/A |
| 100V | 75009980* | 75009954 | 75009983* | 75009957 |

*Indicates a centrifuge, rotor and/or adapter product approved for use in clinical applications; see user manual for details.
§ 220V / 60 Hz [Korea, etc.]

# Sorvall X1 and X1R Pro Centrifuges

## 1.6 L Benchtop centrifuges (Pro series): specifications and ordering information

| Specifications | Sorvall X1 Pro | | Sorvall X1R Pro | |
|---|---|---|---|---|
| | IVD | General Use Only | IVD | General Use Only |
| **Swinging buckets rotors** | | | | |
| Maximum capacity | 4 x 400 mL with TX-400 rotor | | | |
| Maximum speed | 6,300 rpm with BIOShield 720 rotor | | | |
| Maximum RCF | 7,188 x g with BIOShield 720 rotor | | | |
| **Fixed angle rotors** | | | | |
| Maximum capacity | 6x100 mL with F15 6x100y | | | |
| Maximum speed | 15,200 rpm with F21-48x2, Microliter 48x2 or Microliter 30x2 | | | |
| Maximum RCF | 25,830 x g with Microliter 30x2 | | | |
| **Centrifuge details** | | | | |
| Control system | Microprocessor | | | |
| Drive system | Direct, brushless induction low profile motor | | | |
| Accel/decel profiles | Choices of 9 accel / 10 decel rates | | | |
| Material | Front, top, sides: PC-ABS plastic painted with 2K PUR-based lacquer; metal housing: cold rolled steel with powder paint; centrifuge bowl: stainless steel; centrifuge feet: rubber | | | |
| Safety features | SMARTSpin imbalance detection, finger-pinch prevention, crash-proof construction | | | |
| Warranty | 5 years limited (2 years standard warranty + 3 additional years on motor and refrigeration) | | | |
| Includes | Printed English user manual, USB stick with 28 languages of user manual, corrosion resistance oil (70009824), power cord, declaration of conformity | | | |
| Temperature range | N/A | | -10°C to +40°C | |
| Number of compatible rotors | 17 | | 17 | |
| **Display details** | | | | |
| Display | Full color touch screen interface | | | |
| Run time | Max 99h, 59min, 59sec; also with continuous and customizable pulse | | | |
| Speed | Increments of 1 rpm / 1 x g | | | |
| Timer | Count up or down in increments of 1 second | | | |
| Temperature | N/A | | Sample temperature in increments of 1 degree | |
| Program storage | Up to 100 run programs with step programming | | | |
| Programmability | Via easy access touch screen menu | | | |
| **Dimensions, weight** | | | | |
| Width (inches) exterior | 17.5 | | 24.6 | |
| Width (cm) exterior | 44.5 | | 62.5 | |
| Depth (inches) exterior | 26 | | 26 | |
| Depth (cm) exterior | 66 | | 66 | |
| Height (inches) exterior | 14.3 | | 14.2 | |
| Height (cm) exterior | 36.2 | | 36.1 | |
| Height (inches) open cover | 33.6 | | 33.6 | |
| Height (cm) open cover | 85.5 | | 85.5 | |
| Footprint dimensions (inches) | 17.5 x 23.1 | | 24.6 x 23.0 | |
| Footprint dimensions (cm) | 44.5 x 58.8 | | 62.5 x 58.4 | |
| Net weight (lbs) | 134 | | 207 | |
| Net weight (kgs) | 61 | | 94 | |
| **Certifications and standards** | | | | |
| IVD/MD | √ | | √ | |
| Certifications | EN/UL/IEC 61010-1, EN/UL/IEC 61010-2-020 and 61010-2-101, EN/UL/IEC 61326-1, EN/UL/IEC 61326-2-6, FCC part 15 | | | |
| Standards | ISO 14971, ISO 13485, ISO 9001 | | | |

| Ordering information | Sorvall X1 Pro | | Sorvall X1R Pro | |
|---|---|---|---|---|
| | IVD | General Use Only | IVD | General Use Only |
| 230V | 75009220* | 75009720 | 75009260* | 75009760 |
| 120V | 75009220* | N/A | 75009261* | N/A |
| 100V | 75009220* | 75009720 | 75009263* | 75009763 |

*Indicates a centrifuge, rotor and/or adapter product approved for use in clinical applications; see user manual for details.

# Sorvall ST1 and ST1R Plus Centrifuges

## 1.6 L Benchtop centrifuges (Plus series): specifications and ordering information

| Specifications | Sorvall ST1 Plus | | Sorvall ST1R Plus | |
|---|---|---|---|---|
| | IVD | General Use Only | IVD | General Use Only |
| **Swinging buckets rotors** | | | | |
| Maximum capacity | 4 x 400 mL with TX-400 rotor | | | |
| Maximum speed | 5,500 rpm with TX-200 rotor | | | |
| Maximum RCF | 5,580 x g with TX-200 rotor | | | |
| **Fixed angle rotors** | | | | |
| Maximum capacity | 6x100 mL with F15 6x100y | | | |
| Maximum speed | 15,200 rpm with F21-48x2, Microliter 48x2 or Microliter 30x2 | | | |
| Maximum RCF | 25,830 x g with Microliter 30x2 | | | |
| **Centrifuge details** | | | | |
| Control system | Microprocessor | | | |
| Drive system | Direct, brushless induction low profile motor | | | |
| Accel/decel profiles | Choices of 9 accel / 10 decel rates | | | |
| Material | Front, top, sides: PC-ABS plastic painted with 2K PUR-based lacquer; metal housing: cold rolled steel with powder paint; centrifuge bowl: stainless steel; centrifuge feet: rubber | | | |
| Safety features | SMARTSpin imbalance detection, finger-pinch prevention, crash-proof construction | | | |
| Warranty | 5 years limited (2 years standard warranty + 3 additional years on motor and refrigeration) | | | |
| Includes | Printed English user manual, USB stick with 28 languages of user manual, corrosion resistance oil (70009824), power cord, declaration of conformity | | | |
| Temperature range | N/A | | -10°C to +40°C | |
| Number of compatible rotors | 15 | | 15 | |
| **Display details** | | | | |
| Display | Push button and high contrast LCD interface | | | |
| Run time | Max 9h, 59min; also with continuous and pulse modes | | | |
| Speed | Increments of 50 rpm / 50 x g | | | |
| Timer | Count down only in increments of 1 second (from 9 min 59 seconds) and in increments of 1 minute (>10 min) | | | |
| Temperature | N/A | | Sample temperature in increments of 1 degree | |
| Program storage | Up to 6 run programs | | | |
| Programmability | Via 6 direct access buttons | | | |
| **Dimensions, weight** | | | | |
| Width (inches) exterior | 17.5 | | 24.6 | |
| Width (cm) exterior | 44.5 | | 62.5 | |
| Depth (inches) exterior | 26 | | 26 | |
| Depth (cm) exterior | 66 | | 66 | |
| Height (inches) exterior | 14.3 | | 14.2 | |
| Height (cm) exterior | 36.2 | | 36.1 | |
| Height (inches) open cover | 33.6 | | 33.6 | |
| Height (cm) open cover | 85.5 | | 85.5 | |
| Footprint dimensions (inches) | 17.5 x 23.1 | | 24.6 x 23.0 | |
| Footprint dimensions (cm) | 44.5 x 58.8 | | 62.5 x 58.4 | |
| Net weight (lbs) | 134 | | 207 | |
| Net weight (kgs) | 61 | | 94 | |
| **Certifications and standards** | | | | |
| IVD/MD | √ | | √ | |
| Certifications | EN/UL/IEC 61010-1, EN/UL/IEC 61010-2-020 and 61010-2-101, EN/UL/IEC 61326-1, EN/UL/IEC 61326-2-6, FCC part 15 | | | |
| Standards | ISO 14971, ISO 13485, ISO 9001 | | | |

| Ordering information | Sorvall ST1 Plus | | Sorvall ST1R Plus | |
|---|---|---|---|---|
| | IVD | General Use Only | IVD | General Use Only |
| 230V | 75009240* | 75009740 | 75009380* | 75009880 |
| 120V | 75009240* | N/A | 75009381* | N/A |
| 100V | 75009240* | 75009740 | 75009383* | 75009883 |

*Indicates a centrifuge, rotor and/or adapter product approved for use in clinical applications; see user manual for details.

# Swinging bucket rotors

| Thermo Scientific rotor name | | TX-1000 | TX-750 | BIOShield 1000A | TX-400 | BIOShield 720 |
|---|---|---|---|---|---|---|
| Maximum capacity (mL) | | 4 x 1,000 mL | 4 x 750 mL | 4 x 250 mL | 4 x 400 mL | 4 x 180 mL |
| Maximum speed (rpm[1]) | | 4,200 rpm | 4,700 rpm | 6,000 rpm | 5,000 rpm | 6,300 rpm |
| Maximum RCF (x g[1]) | | 4,122 x g | 4,816 x g | 7,164 x g | 4,696 x g | 7,188 x g |
| Biocontainment | | √ (Optional) | √ (Optional) | √ (Integrated) | √ (Optional) | √ (Integrated) |
| Sorvall X4 Pro/X4F Pro | | √ | √ | √ | | |
| Sorvall ST4 Plus/ST4F Plus | | √ | √ | √ | | |
| Sorvall X1 Pro | | | | | √ | √ |
| Sorvall ST1 Plus | | | | | √ | √ |
| Maximum capacity | 1,000 mL bio bottle | 4 | – | – | – | – |
| | 750 mL bio bottle | 4 | 4 | – | – | – |
| | 500 mL centrifuge bottle | 4 | – | – | – | – |
| | 500 mL conical bottle | 4 | 4 | – | – | – |
| | 250 mL centrifuge bottle | 8 | 4 | 4 | 4 | – |
| | 250 mL conical bottle | 4 | * | – | – | – |
| | 225 mL - 175 mL conical bottle | 8 | 4 | – | 4 | – |
| | 50 mL conical tube | 40 | 28 | 16 | 16 | 8 |
| | 50 mL skirted conical tube | 20 | 20 | 16 | – | – |
| | 50 mL round bottom centrifuge tube | 48 | 28 | – | 16 | – |
| | 30 mL universal tube | 28 | 28 | 16 | 12 | 16 |
| | 15 mL conical tube | 96 | 56 | 36 | 36 | 24 |
| | 10 mL blood collection tube (16 x 100 mm) | 148 | 84 | 64 | 56 | 48 |
| | 5/7 mL blood collection tube (13 x 75-100 mm) | 196 | 108 | 80 | 76 | 48 |
| | 4.5/6 mL blood collection tube | 164 | 108 | – | 64 | – |
| | 1.5/2 mL microtube | 192 | 192 | 224 | 136 | 160 |
| | Microplate | 24 | 16 | – | – | – |

[1]Maximum speed based on top performance models.

Biocontainment certification by Public Health England, Porton Down, UK or TÜV NORD CERT GmbH, Germany.

*Fits with 4 x 250 mL Corning™ Conical Bottles and 4 x 200 mL Thermo Scientific™ Nunc™ Conical Bottles.

Note: Labware not shown to scale.

# Swinging bucket rotors (continued)

| Thermo Scientific rotor name | | TX-200 | HIGHPlate 6000 | Fiberlite H3-LV | M-20 | H-Flex 1 | H-Flex HS4 |
|---|---|---|---|---|---|---|---|
| Maximum capacity (mL) | | 4 x 180 mL | 10 Microplates | 28 Microplates | 6 Microplates | 16x50 mL | 16x50 mL |
| Maximum speed (rpm[1]) | | 5,500 rpm | 6,300 rpm | 3,600 rpm | 4,000 rpm | 4,700 rpm | 6,100 rpm |
| Maximum RCF (x g[1]) | | 5,580 x g | 6,168 x g | 2,738 x g | 2,272 x g | 4,297 x g | 7,197 x g |
| Biocontainment | | √ (Optional) | √ (Integrated) | | √ (Optional) | √ (Optional) | √ (Integrated) |
| Sorvall X4 Pro/X4F Pro | | | √ | √ | √ | | √ |
| Sorvall ST4 Plus/ST4F Plus | | | | | √ | | √ |
| Sorvall X1 Pro | | √ | | | √ | √ | |
| Sorvall ST1 Plus | | √ | | | √ | √ | |
| Maximum capacity | 1,000 mL bio bottle | – | – | – | – | – | – |
| | 750 mL bio bottle | – | – | – | – | – | – |
| | 500 mL centrifuge bottle | – | – | – | – | – | – |
| | 500 mL conical bottle | – | – | – | – | – | – |
| | 250 mL centrifuge bottle | – | – | – | – | – | – |
| | 250 mL conical bottle | – | – | – | – | – | – |
| | 225 mL - 175 mL conical bottle | – | – | – | – | – | – |
| | 50 mL conical tube | 4 | – | – | – | 16 | 16 |
| | 50 mL skirted conical tube | 4 | – | – | – | – | – |
| | 50 mL round bottom tube | – | – | – | – | – | – |
| | 30 mL universal tube | 4 | – | – | – | – | – |
| | 15 mL conical tube | 20 | – | – | – | 36 | 36 |
| | 10 mL blood collection tube (16 x 100 mm) | 28 | – | – | – | 66 | 66 |
| | 5/7 mL blood collection tube (13 x 75-100 mm) | 32 | – | – | – | 84 | 84 |
| | 4.5/6 mL blood collection tube | 32 | – | – | – | – | – |
| | 1.5/2 mL microtube | 48 | – | – | – | – | – |
| | Microplate | – | 10 | 28 | 6 | 10 | 10 |

[1]Maximum speed based on top performance models.

Biocontainment certification by Public Health England, Porton Down, UK or TÜV NORD CERT GmbH, Germany.

Note: Labware not shown to scale.

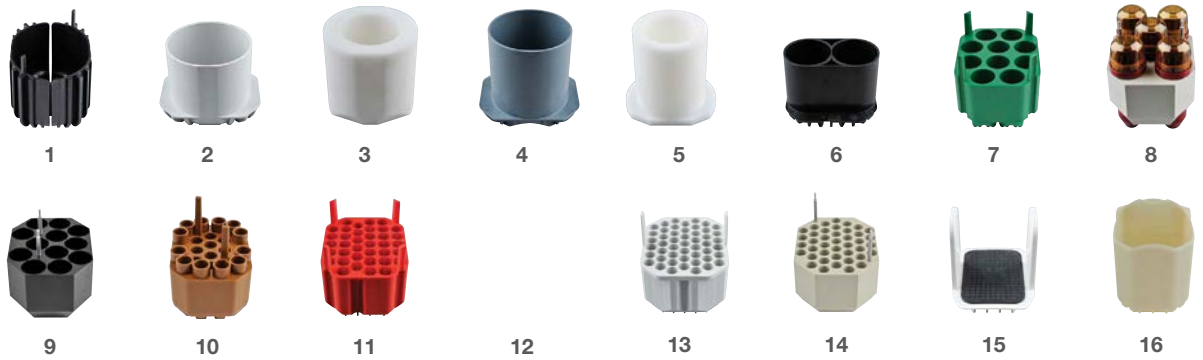
# Rotors and adapters for swinging bucket rotors

## TX-1000 Swinging Bucket Rotor[1]

90°, $R_{max}$ 209 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4R Pro/X4RF Pro | 4,200 | 4,122 |
| Sorvall X4 Pro/X4F Pro | 3,800 | 3,374 |
| Sorvall ST4R/ST4RF Plus | 4,200 | 4,122 |
| Sorvall ST4 Plus/ST4F Plus | 3,800 | 3,374 |
| Sorvall X1 Pro | n/a | n/a |
| Sorvall ST1 Plus | n/a | n/a |

| Adapter image | Description | Rotor capacity (places x volume, mL) | Maximum tube dimensions (Ø x L, mm) | Cat. No. |
|---|---|---|---|---|
| **Rotor and accessories** | | | | |
| | TX-1000 rotor cross with SlideCoat | 4 x 1,000 mL or 24 microplate | | 75003017 |
| | TX-1000 buckets (set of 4) | | | 75003001 |
| | TX-1000 ClickSeal biocontainment lids (set of 4) ◆ | | | 75007309 |
| | Replacement O-rings | | | 75007001 |
| | 1,000 mL Bio-bottle - polypropylene (set of 4) | | | 75007300 |
| **Adapters for TX-1000 rotor (sets of 4, unless otherwise noted)** | | | | |
| 1 | 1,000 mL Bio-bottle | 4 x 1,000 mL | 126 x 140 | 75007301 |
| 2 | 750 mL Polypropylene bio-bottle and any TX-750 round BIOLink adapter | 4 x 750 mL | 98 x 133 | 75007304 |
| 3 | 500 mL Thermo Scientific™ Nalgene™ Bottle | 4 x 500 mL | 70 x 160 | 75004253 |
| 4 | 500 mL Corning™ Bottle | 4 x 500 mL | 98 x 133 | 75007302 |
| 5 | 250 mL Thermo Scientific™ Nunc™ Conical Bottle or 250 mL Corning conical bottle or 200 mL Nunc bottle or 175 mL Nalgene conical bottle | 4 x 250 mL | 62 x 145 | 75005392 |
| 6 | 250 mL Nalgene bottle | 8 x 250 mL | 62 x 145 | 75007305 |
| 6 | 225 mL BD Falcon™ (requires BD #352090) | 8 x 225 mL | 62 x 130 | 75007305 |
| 6 | 200 mL Nunc conical bottle (requires Nunc #377585) | 8 x 200 mL | 62.5 x 139 | 75007305 |
| 7 | 50 mL Conical tube | 40 x 50 mL | 30 x 120 | 75003674 |
| 8 | 50 mL Double biocontainment vessel for 50 mL conical tube (can be combined with ClickSeal lids), pack of 2 adapters | 20 x 50 mL | 30 x 120 | 75004255 |
| 9 | 50 mL Thermo Scientific™ Nalgene™ Oak Ridge Tube | 48 x 50 mL | 29.5 x 120 | 75004252 |
| 10 | 15 mL Conical tube | 96 x 15 mL | 17.5 x 121 | 75007306 |
| 11 | 10 mL Blood collection tube (16 x 100 mm) or Thermo Scientific™ Savant™ Corex™/ Kimble™ Tubes | 148 x 10 mL | 17 x 110 | 75003672 |
| 12 | 9/10 mL Blood collection tube (Sarstedt™) | 100 x 9/10 mL | 17 x 110 | 75003697 |
| 13 | 5/7 mL Blood collection tube (13 x 75-100 mm) | 196 x 5/7 mL | 14 x 110 | 75003671 |
| 14 | 4.5/6 mL Blood collection tube (Greiner™) | 164 x 4.5/6 mL | 14 x 110 | 75003709 |
| 15 | Microplate carriers | 4 x 6 Standard or 4 x 2 Deep well | Height < 88 mm | 75007303 |
| 16 | Small bag/cell culture bags 4 x 2 bags (< 350 mL) | 4 x 2 Bags | | 75003829 |




[1]Rotor, buckets and lids sold separately.

◆Biocontainment certification by Public Health England, Porton Down, UK or TÜV NORD CERT GmbH, Germany.

# TX-750 Swinging Bucket Rotor[1]

## 90°, $R_{max}$ 195 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro | 4,700 | 4,816 |
| Sorvall ST4 Plus/ST4F Plus | 4,700 | 4,816 |
| Sorvall X1 Pro | n/a | n/a |
| Sorvall ST1 Plus | n/a | n/a |

| Adapter image | Description | Rotor capacity (places x volume, mL) | Maximum tube dimensions (Ø x L, mm) | Cat. No. |
|---|---|---|---|---|
| **Rotor and accessories** | | | | |
| | TX-750 rotor cross with SlideCoat | | | 75003180 |
| | TX-750 round buckets (set of 4) | 4 x 750 mL | | 75003608 |
| | TX-750 round ClickSeal biocontainment lids (set of 4) ◆ | | | 75003609 |
| | Replacement TX-750 round O-rings for lids (set of 4) | | | 75003610 |
| | 750 mL Bio-bottle - polypropylene (each) | | | 75006443 |
| 1 | Microplate carriers and T-75 flask* (includes tray and pads) (set of 2) | 4 Standard microplate or 1 Deep well plate per carrier | Maximum height 60 mm | 75003795 |
| 1 | Microplate carriers and T-75 flask* (includes tray and pads) (set of 4) | | | 75003617 |
| 1 | Bucket for Applied Biosystems™ TaqMan® Array Cards (set of 4) | 12 x TaqMan Array Cards | | 75003618 |
| **Adapters for TX-750 rotor (sets of 4, unless stated otherwise)** | | | | |
| | 750 mL Bio-bottle | 4 x 750 mL | 98 x 133 | Direct |
| | 500 mL Corning conical bottle (requires Corning #431124) | 4 x 500 mL | 98 x 133 | Direct |
| 2 | 250 mL Corning conical bottle** and 250 mL Nalgene conical bottle with biocontainment | 4 x 250 mL | 62.5 x 139 | 75003792 |
| 3 | 250 mL Nalgene bottle and 250 mL Nunc Conical Tube (conical tube requires cushion adapter #377585) | 4 x 250 mL | 62.5 x 139 | 75003710 |
| 3 | 225 mL/175 mL BD Falcon conical bottle (requires BD #352090)** | 4 x 225 mL | 62.5 x 139 | 75003710 |
| 3 | 200 mL Nunc conical bottle (requires #377585)** | 4 x 200 mL | 62.5 x 139 | 75003710 |
| 3 | 175 mL Nalgene conical bottle (requires #DS3126-0175)** | 4 x 175 mL | 62.5 x 139 | 75003710 |
| 4 | 100 mL Round bottom open-top tube | 8 x 100 mL | 45 x 123 | 75003713 |
| 5 | 50 mL Conical tube | 28 x 50 mL | 30 x 120 | 75003638 |
| 6 | 50 mL Conical or skirted tube | 20 x 50 mL | 30 x 120 | 75003824 |
| 7 | 50 mL Nalgene Oak Ridge tube | 28 x 50 mL | 29.5 x 120 | 75003715 |
| 8 | 30 mL Thermo Scientific™ Sterilin™ Universal Tube | 28 x 30 mL | 25.5 x 120 | 75003716 |
| 9 | 15 mL Conical tube | 56 x 15 mL | 17 x 122 | 75003639 |
| 10 | 15 mL Blood collection tube (17 x 125 mm in inner circle) | 32 x 15 mL | 17 x 134 | 75003719 |
| 10 | 10 mL Blood collection (16 x 100 mm) or 15 mL Savant Corex/Kimble Tube | 84 x 10/15 mL | 17 x 117 | 75003719 |
| 11 | 14 mL Round or conical urine tube | 48 x 14 mL | 18 x 124 | 75003718 |
| 12 | 5/7 mL or 4.5/6 mL blood collection tube (13 x 75-100 mm) | 108 x 5/7 mL | 13 x 116 | 75003723 |
| 13 | 5 mL RIA or round bottom tube | 148 x 5 mL | 13 x 111 | 75003724 |
| 13 | 5/7 mL Round bottom tube with decanting aid | 148 x 5/7 mL | 13 x 111 | 75003732 |
| 14 | 1.5/2 mL Microtube | 192 x 2 mL | 11 x 50 | 75003733 |
| 15 | T-75 Thermo Scientific™ Nunc™ EasYFlask™ Cell Culture Flasks (set of 2) | 4 x T-75 | – | 75008383 |
| 16 | T-25 Nunc EasYFlask cell culture flask (set of 2) | 8 x T-25 | – | 75008384 |
| 17 | Blood Bag/ Cell Culture Bag (<600 mL) | 4 x 1 bags | – | 75003427 |

1 2 3 4 5 6 7 8 9

10 11 12 13 14 15 16 17

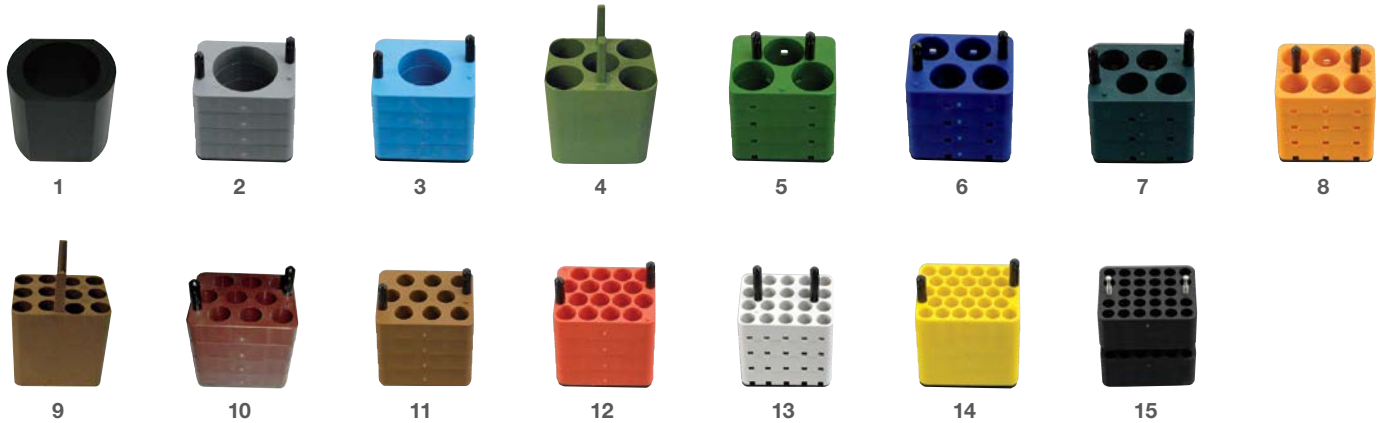
[1]Rotor, buckets and lids sold separately.
* Compatible with Nunc #178905
** Compatible in open bucket configuration without biocontainment
◆Biocontainment certification by Public Health England, Porton Down, UK or TÜV NORD CERT GmbH, Germany.

# TX-750 Swinging Bucket Rotor[1]

90°, $R_{max}$ 195 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4R Pro/X4RF Pro, Sorvall ST4R/ST4RF Plus, 230V | 4,700 | 4,816 |
| Sorvall X4 Pro/X4F Pro, Sorvall ST4 Plus/ST4F Plus, 230V | 4,500 | 4,415 |
| Sorvall X4 Pro/X4F Pro Series, Sorvall ST4 Plus/ST4F Plus Series, 120V | 4,300 | 4,031 |
| Sorvall X1 Pro, Sorvall ST1 Plus | n/a | n/a |

| Adapter image | Description | Rotor capacity (places x volume, mL) | Maximum tube dimensions (Ø x L, mm) | Cat. No. |
|---|---|---|---|---|
| **Rotor and accessories** | | | | |
| | TX-750 rotor cross with SlideCoat | | | 75003180 |
| | TX-750 rectangular buckets (set of 4) | 4 x 250 mL | | 75003614 |
| | TX-750 rectangular ClickSeal biocontainment lids (set of 4) ◆ | | | 75003615 |
| **Adapters for TX-750 rotor (sets of 4)** | | | | |
| **1** | 250 mL Flat bottom bottle | 4 x 250 mL | 63 x 130 | 75003737 |
| **2** | 150 mL Round bottom open-top tube | 4 x 150 mL | 56 x 124 | 75003738 |
| **3** | 100 mL Round bottom open-top tube | 4 x 100 mL | 46 x 124 | 75003742 |
| **4** | 50 mL Conical tube | 20 x 50 mL | 30 x 121 | 75003685 |
| **5** | 50 mL Round bottom tube | 12 x 50 mL | 35 x 121 | 75003749 |
| **6** | 45 mL Flat/round tube | 16 x 45 mL | 30 x 121 | 75003750 |
| **7** | 30 mL Sterilin universal tube | 16 x 30 mL | 26 x 121 | 75003755 |
| **8** | 25 mL DIN Round bottom tube | 24 x 25 mL | 26 x 121 | 75003756 |
| **9** | 15 mL Conical tube | 48 x 15 mL | 17 x 120 | 75003684 |
| **10** | 14 mL Flanged round bottom tube | 36 x 14 mL | 18 x 121 | 75003758 |
| **11** | 14 mL Round or conical urine tube | 36 x 15 mL | 17 x 124 | 75003759 |
| **12** | 10 mL Blood collection (16 x 100 mm) or 15 mL DIN tube | 64 x 10/15 mL | 17 x 118 | 75003767 |
| **13** | 5/7 mL or 4.5/6 mL blood collection tube | 80 x 5/7 mL | 14 x 118 | 75003768 |
| **14** | 5/7 mL Round bottom tube (13 x 75-100 mm) | 112 x 5/7 mL | 13 x 119 | 75003769 |
| **15** | 1.5/2 mL Microtube | 224 x 2 mL | 11 x 50 | 75003770 |




[1]Rotor, buckets and lids sold separately.

◆Biocontainment certification by Public Health England, Porton Down, UK or TÜV NORD CERT GmbH, Germany.

# BIOShield 1000A Swinging Bucket Rotor

90°, $R_{max}$ 178 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro | 6,000 | 7,164 |
| Sorvall ST4 Plus/ST4F Plus | 5,300 | 5,590 |
| Sorvall X1 Pro | n/a | n/a |
| Sorvall ST1 Plus | n/a | n/a |

| Adapter image | Description | Rotor capacity (places x volume, mL) | Maximum tube dimensions (Ø x L, mm) | Cat. No. |
|---|---|---|---|---|
| **Rotor and accessories** | | | | |
| | BIOShield 1000A with SlideCoat ◆ | 4 x 250 mL | | 75003182 |
| **Adapters for BIOShield 1000A rotor (sets of 4)** | | | | |
| **1** | 250 mL Flat bottom bottle | 4 x 250 mL | 63 x 130 | 75003737 |
| **2** | 150 mL Round bottom open-top tube | 4 x 150 mL | 56 x 124 | 75003738 |
| **3** | 100 mL Round bottom open-top tube | 4 x 100 mL | 46 x 124 | 75003742 |
| **4** | 50 mL Round bottom tube | 12 x 50 mL | 35 x 121 | 75003749 |
| **5** | 45 mL Flat/round tube | 16 x 45 mL | 30 x 121 | 75003750 |
| **6** | 30 mL Sterilin universal tube | 16 x 30 mL | 30 x 121 | 75003755 |
| **7** | 25 mL DIN Round bottom tube | 24 x 25 mL | 26 x 121 | 75003756 |
| **8** | 14 mL Flanged round bottom tube | 36 x 14 mL | 18 x 121 | 75003758 |
| **9** | 14 mL Round or conical urine tube | 36 x 15 mL | 17 x 124 | 75003759 |
| **10** | 10 mL Blood collection (16 x 100 mm) or 15 mL DIN Tube | 64 x 10/15 mL | 17 x 118 | 75003767 |
| **11** | 5/7 mL or 4.5/6 mL Blood collection tube | 80 x 5/7 mL | 14 x 118 | 75003768 |
| **12** | 5/7 mL Round bottom tube (13 x 75-100 mm) | 112 x 5/7 mL | 13 x 119 | 75003769 |
| **13** | 1.5/2 mL Microtube | 224 x 2 mL | 11 x 50 | 75003770 |
| **14** | 50 mL Conical tube | 16 x 50 mL | 30 x 121 | 75003643 |
| **15** | 15 mL Conical tube | 36 x 15 mL | 17 x 120 | 75003642 |

◆Biocontainment certification by Public Health England, Porton Down, UK or TÜV NORD CERT GmbH, Germany.

# TX-400 Swinging Bucket Rotor[1]

90°, $R_{max}$ 168 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro | n/a | n/a |
| Sorvall ST4 Plus/ST4F Plus | n/a | n/a |
| Sorvall X1 Pro | 5,000 | 4,696 |
| Sorvall ST1 Plus | 5,000 | 4,696 |

| Adapter image | Description | Rotor capacity (places x volume, mL) | Maximum tube dimensions (Ø x L, mm) | Cat. No. |
|---|---|---|---|---|
| **Rotor and accessories** | | | | |
| | TX-400 rotor cross with SlideCoat | | | 75003181 |
| | TX-400 round buckets (set of 4) | 4 x 400 mL | | 75003655 |
| | TX-400 round ClickSeal biocontainment lids (set of 4) ◆ | | | 75003656 |
| | Replacement TX-400 O-rings for lids (set of 4) | | | 75003657 |
| | 400 mL Bio-bottle - polypropylene (set of 12) | | | 75007585 |
| **Adapters for TX-400 rotor (sets of 4)** | | | | |
| | 400 mL Bio-bottle | 4 x 400 mL | 80 x 125 | Direct |
| 1 | 250 mL Nalgene bottle | 4 x 250 mL | 62 x 135 | 75003788 |
| 1 | 200 mL Nunc conical bottle (requires Nunc #377585) | 4 x 200 mL | 62 x 125 | 75003788 |
| 1 | 175 mL BD Falcon conical bottle (requires BD #352090) | 4 x 175 mL | 62 x 125 | 75003788 |
| 2 | 100 mL Round bottom open-top tube | 4 x 100 mL | 45 x 117 | 75003708 |
| 3 | 50 mL DIN Round bottom tube | 12 x 50 mL | 34.5 x 105 | 75003707 |
| 4 | 50 mL Nalgene Oak Ridge tube | 16 x 50 mL | 29.5 x 114 | 75003799 |
| 5 | 50 mL Conical tube | 16 x 50 mL | 30 x 116 | 75003683 |
| 6 | 30/25 mL DIN round/flat bottom tube | 20 x 30 mL | 25.5 x 108 | 75003703 |
| 7 | 30 mL Sterilin universal tube | 12 x 30 mL | 25 x 110 | 75003706 |
| 8 | 15 mL Conical tube | 36 x 15 mL | 17 x 121 | 75003682 |
| 9 | 15 mL Blood collection tube (17 x 125 mm) | 16 x 15 mL | 17 x 131 | 75003794 |
| 10 | 15 mL Round bottom tube (Sarstedt) | 40 x 15 mL | 17 x 105 | 75003704 |
| 11 | 14 mL Round or conical urine tube | 28 x 14 mL | 17 x 112 | 75003798 |
| 12 | 10 mL Blood collection (16 x 100 mm) | 56 x 10/15 mL | 16 x 113 | 75003681 |
| 13 | 5/7 mL Blood collection tube (13 x 75-100 mm) | 76 x 5/7 mL | 13 x 110 | 75003680 |
| 14 | 4.5/6 mL Blood collection tube (Greiner) | 64 x 4.5/6 mL | 13 x 110 | 75003825 |
| 15 | 3 mL RIA or Round bottom tube | 76 x 3/5 mL | 11 x 110 | 75003793 |
| 16 | 1.5/2 mL Microtube | 136 x 2 mL | 11 x 45 | 75003700 |

[1]Rotor, buckets and lids sold separately.

◆Biocontainment certification by Public Health England, Porton Down, UK or TÜV NORD CERT GmbH, Germany.

# BIOShield 720 Swinging Bucket Rotor

90°, $R_{max}$ 162 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro | n/a | n/a |
| Sorvall ST4 Plus/ST4F Plus | n/a | n/a |
| Sorvall X1 Pro | 6,300 | 7,188 |
| Sorvall ST1 Plus | 5,300 | 5,088 |

| Adapter image | Description | Rotor capacity (places x volume, mL) | Maximum tube dimensions (Ø x L, mm) | Cat. No. |
|---|---|---|---|---|
| **Rotor and accessories** | | | | |
| | BIOShield 720 with SlideCoat ◆ | 4 x 180 mL | n/a | 75003183 |
| | 180 mL Bio-bottle - polypropylene (set of 12) | | | 75003800 |
| **BIOShield 720A adapters (sets of 4)** | | | | |
| **1** | 180 mL Bio-bottle | 4 x 180 mL | 56 x 128 | 75003693 |
| **2** | 100 mL Round bottom open-top tube | 4 x 100 mL | 44 x 120 | 75003814 |
| **3** | 50 mL Conical tube | 8 x 50 mL | 30 x 116 | 75003677 |
| **4** | 50 mL DIN round bottom tube | 8 x 50 mL | 34 x 109 | 75003816 |
| **5** | 30 mL Sterilin universal tube | 16 x 30 mL | 26 x 105 | 75003818 |
| **6** | 25 mL DIN round bottom tube | 20 x 25 mL | 25 x 107 | 75003817 |
| **7** | 15 mL Conical tube | 24 x 15 mL | 17 x 120 | 75003678 |
| **8** | 15 mL Sarstedt tube | 44 x 15 mL | 17 x 103 | 75003820 |
| **9** | 10 mL Blood collection tube (16 x 100 mm) | 48 x 10 mL | 17 x 105 | 75003701 |
| **10** | 5/7 mL Blood collection tube (13 x 75-100 mm) | 48 x 5/7 mL | 13 x 106 | 75003821 |
| **11** | 5/7 mL Round bottom open-top tube | 80 x 5/7 mL | 13 x 104 | 75003822 |
| **12** | 1.5/2 mL Conical microtube | 160 x 2 mL | 11 x 45 | 75003823 |

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◆ Biocontainment certification by Public Health England, Porton Down, UK or TÜV NORD CERT GmbH, Germany.

# TX-200 Swinging Bucket Rotor[1]

## 90°, $R_{max}$ 165 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro | n/a | n/a |
| Sorvall ST4 Plus/ST4F Plus | n/a | n/a |
| Sorvall X1R Pro 230V and 120V | 5,500 | 5,580 |
| Sorvall X1 Pro 120V | 5,500 | 5,580 |
| Sorvall ST1R Plus 230V and 120V | 5,500 | 5,580 |
| Sorvall ST1 Plus 120V | 5,500 | 5,080 |

| Adapter image | Description | Rotor capacity (places x volume, mL) | Maximum tube dimensions (Ø x L, mm) | Cat. No. |
|---|---|---|---|---|
| **Rotor and accessories** | | | | |
| | TX-200 rotor cross | | | 75003658 |
| | TX-200 round buckets (set of 4) | 4 x 180 mL | | 75003659 |
| | TX-200 round ClickSeal biocontainment lids (set of 4) ◆ | | | 75003660 |
| | Replacement TX-200 O-rings for lids (set of 4) | | | 75003687 |
| | 180 mL Bio-bottle - polypropylene (set of 12) | | | 75003800 |
| **Adapters for TX-200 rotor (sets of 4)** | | | | |
| | 180 mL Bio-bottle | 4 x 180 mL | 56.5 x 123 | Direct |
| **1** | 100 mL Round bottom open-top tube | 4 x 100 mL | 48 x 122 | 75003801 |
| **2** | 50 mL DIN Round bottom tube | 4 x 50 mL | 35 x 126 | 75003802 |
| **3** | 50 mL Conical or skirted tube | 4 x 50 mL | 30 x 126 | 75003803 |
| **4** | 30 mL Sterilin universal tube | 4 x 30 mL | 26 x 118 | 75003804 |
| **5** | 25 mL DIN round/flat bottom tube | 8 x 25 mL | 25 x 118 | 75003805 |
| **7** | 15 mL Conical tube | 20 x 20 mL | 17 x 121 | 75003771 |
| **8** | 15 mL Blood collection tube | 16 x 15 mL | 17 x 121 | 75003809 |
| **9** | 14 mL Conical urine tube | 8 x 14 mL | 17 x 114 | 75003807 |
| **10** | 10 mL Blood collection (16 x 100 mm) or 15 mL Savant Corex/Kimble Tube | 28 x 10/15 mL | 17 x 121 | 75003808 |
| **11** | 5/7 mL or 4.5/6 mL blood collection tube (13 x 75-100 mm) | 32 x 5/7 mL | 13 x 122 | 75003785 |
| **12** | 5/7 mL Round bottom open-top tube | 36 x 5/7 mL | 13 x 118 | 75003810 |
| **13** | 1.5/2 mL Microtube | 48 x 2 mL | 11 x 45 | 75003812 |

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[1]Rotor, buckets and lids sold separately.

◆Biocontainment certification by Public Health England, Porton Down, UK or TÜV NORD CERT GmbH, Germany.

## HIGHPlate 6000 Swinging Bucket Rotor

90°, $R_{max}$ 139 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro | 6,300 | 6,168 |
| Sorvall ST4 Plus/ST4F Plus | n/a | n/a |
| Sorvall X1 Pro | n/a | n/a |
| Sorvall ST1 Plus | n/a | n/a |

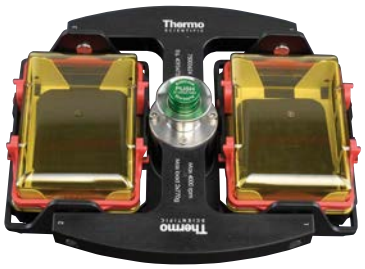
| Description | Rotor capacity (places x volume, mL) | Maximum height | Cat. No. |
|---|---|---|---|
| **Rotor** | | | |
| HIGHPlate 6000 rotor | 2 x 5 Standard microplate or 2 x 1 filter plates | < 80 mm | 75003606 |

## Fiberlite H3-LV Swinging Bucket Rotor

90°, $R_{max}$ 189 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro | 3,600 | 2,738 |
| Sorvall ST4 Plus/ST4F Plus | n/a | n/a |
| Sorvall X1 Pro | n/a | n/a |
| Sorvall ST1 Plus | n/a | n/a |

| Description | Rotor capacity (places x volume, mL) | Maximum height | Cat. No. |
|---|---|---|---|
| **Rotor** | | | |
| Fiberlite H3-LV rotor | 4 x 7 Standard microplate or 2 x 4 Deep well | < 100 mm | 75003665 |




## M-20 Swinging Bucket Rotor[1]

90°, $R_{max}$ 127 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro | 4,000 | 2,272 |
| Sorvall ST4 Plus/ST4F Plus | 4,000 | 2,272 |
| Sorvall X1 Pro | 4,000 | 2,272 |
| Sorvall ST1 Plus | 4,000 | 2,272 |

| Description | Rotor capacity (places x volume, mL) | Maximum height | Cat. No. |
|---|---|---|---|
| **Rotor and accessories** | | | |
| M-20 microplate rotor including standard open carriers | 2 x 3 Standard Microplate<br>2 x 1 Deep well | < 65 mm | 75003624 |
| ClickSeal carriers including carrier and lids | | < 45 mm | 75003625 |
| ClickSeal replacement lids (set of 2) | | | 75002011 |

[1]Biocontainment system sold separately.

Biocontainment certification by Public Health England, Porton Down, UK or TÜV NORD CERT GmbH, Germany.

## H-Flex 1 Swinging Bucket Rotor[1]

90°, $R_{max}$ 170 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X1 Pro | 4,700 | 4,297 |
| Sorvall ST1 Plus | 4,700 | 4,297 |
| Sorvall X4 Pro/X4F Pro | n/a | n/a |
| Sorvall ST4 Plus/ST4F Plus | n/a | n/a |

## H-Flex HS4 Swinging Bucket Rotor[1]

90°, $R_{max}$ 170 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X1 Pro | n/a | n/a |
| Sorvall ST1 Plus | n/a | n/a |
| Sorvall X4 Pro/X4F Pro | 6,100 | 7,197 |
| Sorvall ST4 Plus/ST4F Plus | 6,100 | 7,197 |

| Adapter image | Description | Rotor capacity (places x volume, mL) | Maximum tube dimensions (Ø x L, mm) | Cat. No. |
|---|---|---|---|---|
| **Rotor and accessories** | | | | |
| | H-Flex 1 rotor cross with SlideCoat | | | 75003300 |
| | H-Flex 1 rotor buckets (set of 2) | | | 75003301 |
| | H-Flex 1 rotor biocontainment lids (set of 2) ☣ | | | 75003302 |
| | H-Flex 1 rotor biocontainment lid replacement O-Rings (set of 2) | | | 75003309 |
| | H-Flex HS4 rotor with SlideCoat ☣ | | | 75003330 |
| | H-Flex HS4 replacement bucket (set of 2) | | | 75003338 |
| | H-Flex HS4 replacement windshield lid | | | 75003339 |
| **Adapters for H-Flex 1 and HS4 rotor (sets of 2)** | | | | |
| 1 | 50 mL Conical tube | 16 x 50 mL | 30 x 126 | 75003303 |
| 2 | 15 mL Conical tube | 36 x 15 mL | 17 x 121 | 75003304 |
| 3 | 10/12 mL Blood collection tube (16 x 100 mm) | 66 x 10/15 mL | 16 x 110 | 75003305 |
| 4 | 5/7 mL Blood collection tube (13 x 75-100 mm) | 84 x 5/7 mL | 13 x 108 | 75003306 |
| 5 | Microplate carriers | 2 x 5 Standard Microplate<br>2 x 1 Deep well | <77 mm | 75003307 |
| 6 | H-Flex 1 rotor 400 mL bottle and Centri-lab BIOLink Adapter* | n/a | n/a | 75003308 |

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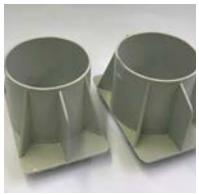

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[1]Rotor, buckets and lids sold separately.

* 400 mL Bottle/Centrilab Adapter maximum speed is 3800 rpm and 2800 x g.

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# Fixed angle rotors

| Thermo Scientific rotor name | | Fiberlite F14-6x250 LE | Fiberlite F15-6x100y | Fiberlite F10-6x100 LEX | Fiberlite F13-14x50cy | Fiberlite F15-8x50cy | CLINIConic |
|---|---|---|---|---|---|---|---|
| Maximum capacity (mL) | | 6 x 250 mL | 6 x 100 mL | 6 x 100 mL | 14 x 50 mL | 8 x 50 mL | 30 x 15 mL |
| Maximum speed (rpm[1]) | | 11,000 rpm | 15,000 rpm | 10,500 rpm | 10,000 rpm | 14,500 rpm | 5,650 rpm |
| Maximum RCF (x g[1]) | | 18,533 x g | 24,652 x g | 15,038 x g | 17,105 x g | 24,446 x g | 4,997 x g |
| Biocontainment ◈ | | √ | √ | √ | √ | √ | |
| Sorvall X4 Pro/X4F Pro | | √ | √ | √ | √ | √ | |
| Sorvall ST4 Plus/ST4F Plus | | | √ | √ | | | |
| Sorvall X1 Pro | | | √ | √ | √ | √ | √ |
| Sorvall ST1 Plus | | | √ | √ | | | √ |
| Maximum capacity | 250 mL centrifuge bottle | 6 | – | – | – | – | – |
| | 85 mL round bottom centrifuge tube | 6 | 6 | 6 | – | – | – |
| | 50 mL round bottom centrifuge tube | 6 | 6 | 6 | 14 | 8 | – |
| | 50 mL conical tube | 6 | 6 | 6 | 14 | 8 | – |
| | 30 mL round bottom centrifuge tube | 12 | 6 | 6 | 14 | 8 | – |
| | 16 mL round bottom centrifuge tube | 30 | 6 | 6 | 14 | 8 | – |
| | 15 mL conical tube | 30 | 6 | 6 | 14 | 8 | 30 |
| | 10 mL round bottom centrifuge tube | 42 | 12 | 12 | 14 | 8 | – |
| | 10 mL blood collection tube (16 x 100 mm) | – | – | – | – | – | 30 |
| | 5/7 mL blood collection tube (13 x 75-100 mm) | – | – | – | – | – | 30 |
| | 6.5 mL round tube | – | 12 | 12 | – | – | – |
| | 1.5/2 mL microtube | – | 24 | 24 | – | – | – |

[1] Maximum speed based on top performance models.

◈ Biocontainment certification by Public Health England, Porton Down, UK or TÜV NORD CERT GmbH, Germany.

Note: Labware not shown to scale.

# Fixed angle rotors (continued)

| Thermo Scientific rotor name | | 8 x 50 Sealed | HIGHConic II | MicroClick 18 x 5 | Fiberlite F21-48x2 | Microliter 48 x 2 | MicroClick 30 x 2 | Microliter 30 x 2 |
|---|---|---|---|---|---|---|---|---|
| Maximum capacity (mL) | | 8 x 50 mL | 6 x 100 mL | 18 x 5 mL | 48 x 2 mL | 48 x 2 mL | 30 x 2 mL | 30 x 2 mL |
| Maximum speed (rpm[1]) | | 6,700 rpm | 10,350 rpm | 15,000 rpm | 15,200 rpm | 15,200 rpm | 14,000 rpm | 15,200 rpm |
| Maximum RCF (x g[1]) | | 7,177 x g | 15,090 x g | 24,652 x g | 25,055 x g | 25,314 x g | 21,693 x g | 25,830 x g |
| Biocontainment | | √ (Individual) | √ | √ | √ | √ | √ | √ |
| Sorvall X4 Pro/X4F Pro | | | √ | √ | √ | √ | √ | √ |
| Sorvall ST4 Plus/ST4F Plus | | | √ | √ | √ | √ | √ | √ |
| Sorvall X1 Pro | | √ | √ | √ | √ | √ | √ | √ |
| Sorvall ST1 Plus | | √ | √ | √ | √ | √ | √ | √ |
| Maximum capacity | 250 mL centrifuge bottle | – | – | – | – | – | – | – |
| | 85 mL round bottom centrifuge tube | – | 6 | – | – | – | – | – |
| | 50 mL round bottom centrifuge tube | – | 6 | – | – | – | – | – |
| | 50 mL conical tube | 8 | 6 | – | – | – | – | – |
| | 30 mL round bottom centrifuge tube | – | 6 | – | – | – | – | – |
| | 16 mL round bottom centrifuge tube | – | 6 | – | – | – | – | – |
| | 15 mL conical tube | 8 | 6 | – | – | – | – | – |
| | 10 mL round bottom centrifuge tube | – | 12 | – | – | – | – | – |
| | 10 mL blood collection tube (16 x 100 mm) | 8 | – | – | – | – | – | – |
| | 5/7 mL blood collection tube (13 x 75-100 mm) | 8 | – | – | – | – | – | – |
| | 6.5 mL round tube | – | 12 | – | – | – | – | – |
| | 1.5/2 mL microtube | – | 24 | 18 | 48 | 48 | 30 (Including spin columns) | 30 |
| | 5 mL microtube | – | – | 18 | – | – | – | – |
| | PCR tube | – | – | – | 48 | 48 | 30 | 30 |

[1] Maximum speed based on top performance models.

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Note: Labware not shown to scale.

# Rotors and adapters for fixed angle rotors

## Fiberlite F14-6x250 LE Fixed Angle Rotor

23°, $R_{max}$ 137 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro 230V | 11,000 | 18,533 |
| Sorvall X4 Pro/X4F Pro 120V | 10,000 | 15,317 |
| Sorvall ST4 Plus/ST4F Plus | n/a | n/a |
| Sorvall X1 Pro | n/a | n/a |

| Description | Rotor capacity (places x volume, mL) | Maximum tube dimensions (Ø x L, mm) | Cat. No. |
|---|---|---|---|
| **Rotor and accessories** | | | |
| Fiberlite F14-6 x 250LE rotor for 250 mL centrifuge bottles ◆ | 6 x 250 mL | 62 x 125 | 75003662 |
| Replacement O-Ring kit | | | 021-062153 |
| 250 mL Thermo Scientific™ Nalgene™ Polypropylene Bottle (case of 36) | | | 3141-0250 |
| 250 mL Thermo Scientific™ Nalgene™ Polycarbonate Bottle (case of 36) | | | 3140-0250 |
| **Adapters for F14-6 x 250LE rotor (sets of 2, unless stated otherwise)** | | | |
| 85 mL Nalgene Oak Ridge tube | 6 x 85 mL | 38 x 109 | 010-1119 |
| 50 mL Nalgene Oak Ridge tube | 6 x 50 mL | 29.5 x 121 | 010-0138 |
| 50 mL Conical tube | 6 x 50 mL | 30 x 121 | 75100136 |
| 30 mL Nalgene Oak Ridge tube / 38 mL round tube | 12 x 30 mL | 26 x 105 | 010-1072 |
| 16 mL Nalgene Oak Ridge tube | 30 x 16 mL | 18 x 107 | 010-1074 |
| 15 mL Conical tube | 30 x 15 mL | 17 x 121 | 010-1410 |
| 10 mL Nalgene Oak Ridge tube / 12 mL round tube (each) | 42 x 10 mL | 17 x 110 | 00389 |

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## Fiberlite F15-6x100y Fixed Angle Rotor

25°, $R_{max}$ 98 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro | 15,000 | 24,652 |
| Sorvall ST4 Plus/ST4F Plus | 13,000 | 18,516 |
| Sorvall X1 Pro | 15,000 | 24,652 |
| Sorvall ST1 Plus | 13,000 | 18,516 |

## Fiberlite F10-6x100 LEX Fixed Angle Rotor

45°, $R_{max}$ 122 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro | 10,500 | 15,038 |
| Sorvall ST4 Plus/ST4F Plus | 10,500 | 15,038 |
| Sorvall X1 Pro | 10,500 | 15,038 |
| Sorvall ST1 Plus | 10,500 | 15,038 |

| Description | Rotor capacity (places x volume, mL) | Maximum tube dimensions (Ø x L, mm) | Cat. No. |
|---|---|---|---|
| **Rotor and accessories** | | | |
| Fiberlite F15-6 x 100y rotor for 100 mL/85 mL Nalgene ◆ | 6 x 100 mL | 38 x 106 | 75003698 |
| Replacement O-Ring kit | | | 021-069031 |
| Fiberlite F10-6 x 100 LEX rotor for 100 mL/85 mL Nalgene ◆ | 6 x 100 mL | 38 x 106 | 75003340 |
| Replacement O-Ring kit | | | 021-069035 |
| 85 mL Nalgene Oak Ridge tube (set of 50) | 6 x 85 mL | 38 x 106 | 3118-0085 |
| **Adapters for F15-6 x 100y and F10-6x100 LEX rotor (each, unless stated otherwise)** | | | |
| 50 mL Nalgene Oak Ridge tube (set of 2) | 6 x 50 mL | 29.5 x 117 | 010-1194 |
| 50 mL Conical tube (set of 2) | 6 x 50 mL | 30 x 121 | 010-1270 |
| 30 mL Nalgene Oak Ridge tube / 38 mL round tube (set of 2) | 6 x 30 mL | 26 x 110 | 010-1273 |
| 16 mL Nalgene Oak Ridge tube (set of 2) | 6 x 16 mL | 18 x 123 | 010-1272 |
| 15 mL Conical tube (set of 2) | 6 x 15 mL | 17 x 123 | 010-1271 |
| 10 mL Nalgene Oak Ridge tube / 12 mL round tube | 12 x 12 mL | 17 x 95 | 75003093 |
| 6.5 mL Round bottom tube | 12 x 6.5 mL | 13 x 114 | 75003092 |
| 3 mL Vacutainer / round bottom tube (set of 2) | 18 x 3 mL | 10 x 64 | 010-1126 |
| 1.5/ 2 mL Microtube | 24 x 2 mL | 11 x 40 | 75003091 |

◆ Biocontainment certification by Public Health England, Porton Down, UK or TÜV NORD CERT GmbH, Germany.

## Fiberlite F13-14x50cy Fixed Angle Rotor

34°, $R_{max}$ 153 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro 230V | 10,000 | 17,105 |
| Sorvall X4 Pro/X4F Pro 120V | 9,250 | 14,636 |
| Sorvall ST4 Plus/ST4F Plus | n/a | n/a |
| Sorvall X1 Pro | 8,500 | 12,359 |
| Sorvall ST1 Plus | n/a | n/a |

| Description | Rotor capacity (places x volume, mL) | Maximum tube dimensions (Ø x L, mm) | Cat. No. |
|---|---|---|---|
| **Rotor and accessories** | | | |
| Fiberlite F13-14x50cy for 50 mL conical tubes ◆ | 14 x 50 mL | 30 x 121 | 75003661 |
| Replacement O-Ring kit | | | 021-149027 |
| **Adapters for F13-14x50cy rotor (set of 2, unless otherwise stated)** | | | |
| 50 mL Nalgene Oak Ridge tube | 14 x 50 mL | 29.5 x 108 | 010-0377 |
| 30 mL Nalgene Oak Ridge tube | 14 x 30 mL | 26 x 102 | 010-1147 |
| 16 mL Nalgene Oak Ridge tube | 14 x 16 mL | 18 x 123 | 010-0376 |
| 15 mL Corning conical tube | 14 x 15 mL | 17 x 121 | 75100378 |
| 15 mL Nunc conical tube and filtration devices | 14 x 15 mL | 17 x 121 | 010-1340 |
| 10 mL Nalgene Oak Ridge tube / 12 mL round tube | 28 x 12 mL | 17 x 95 | 010-1311 |

## Fiberlite F15-8x50cy Fixed Angle Rotor

25°, $R_{max}$ 104 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro | 14,500 | 24,446 |
| Sorvall ST4 Plus/ST4F Plus | n/a | n/a |
| Sorvall X1 Pro 230V | 14,500 | 24,446 |
| Sorvall X1 Pro 120V | 14,000 | 22,789 |
| Sorvall ST1 Plus | n/a | n/a |

| Description | Rotor capacity (places x volume, mL) | Maximum tube dimensions (Ø x L, mm) | Cat. No. |
|---|---|---|---|
| **Rotor and accessories** | | | |
| Fiberlite F15-8x50cy for 50 mL conical tubes ◆ | 8 x 50 mL | 30 x 121 | 75003663 |
| Replacement O-Ring kit | | | 021-085077 |
| **Adapters for F15-8x50cy rotor (set of 2, unless otherwise stated)** | | | |
| 50 mL Nalgene Oak Ridge tube | 8 x 50 mL | 29 x 108 | 010-0377 |
| 30 mL Nalgene Oak Ridge tube | 8 x 30 mL | 26 x 102 | 010-1147 |
| 16 mL Nalgene Oak Ridge tube | 8 x 16 mL | 18 x 123 | 010-0376 |
| 15 mL Corning conical tube | 8 x 15 mL | 17 x 121 | 75100378 |
| 15 mL Nunc conical tube and filtration devices | 8 x 15 mL | 17 x 121 | 010-1340 |
| 10 mL Nalgene Oak Ridge tube / 12 mL round tube | 8 x 12 mL | 17 x 95 | 010-1311 |

◆ Biocontainment certification by Public Health England, Porton Down, UK or TÜV NORD CERT GmbH, Germany.

## CLINIConic Fixed Angle Rotor

37°, $R_{max}$ 140 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro | n/a | n/a |
| Sorvall ST4 Plus/ST4F Plus | n/a | n/a |
| Sorvall X1 Pro | 5,650 | 4,997 |
| Sorvall ST1 Plus | 5,650 | 4,997 |

| Description | Rotor capacity (places x volume, mL) | Maximum tube dimensions (Ø x L, mm) | Cat. No. |
|---|---|---|---|
| **Rotor and accessories** | | | |
| CLINIConic fixed angle rotor for 15 mL round and conical tubes | 30 x 15 mL | 17 x 121 | 75003623 |
| **Adapters for CLINIConic rotor (each)** | | | |
| 10 mL Round bottom tube | 30 x 10 mL | 17 x 131 | 75003702 |
| 7 mL Blood collection tubes (13 x 100 mm) | 30 x 7 mL | 17 x 131 | 11172596 |
| 5 mL Blood collection tubes (13 x 75 mm) | 30 x 5 mL | 13 x 95 | 11172595 |

## 8 x 50 Individually Sealed Fixed Angle Rotor

45°, $R_{max}$ 143 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro | n/a | n/a |
| Sorvall ST4 Plus/ST4F Plus | n/a | n/a |
| Sorvall X1 Pro 230V | 6,700 | 7,177 |
| Sorvall X1 Pro 120V | 6,500 | 6,755 |
| Sorvall ST1 Plus 230V | 6,700 | 7,177 |
| Sorvall ST1 Plus 120V | 6,500 | 6,755 |

| Description | Rotor capacity (places x volume, mL) | Maximum tube dimensions (Ø x L, mm) | Cat. No. |
|---|---|---|---|
| **Rotor and accessories** | | | |
| 8 x 50 Individually sealed for 50 mL conical tubes ◆ | 8 x 50 mL | 30 x 121 | 75003694 |
| 50 mL Sealed single bucket replacement, each | | | 75003787 |
| **Adapters for 8 x 50 sealed rotor (set of 2)** | | | |
| 15 mL Conical tube adapters | 8 x 50 mL | 17 x 121 | 75005808 |
| 7 mL Blood collection tube (13 x 100 mm) | 8 x 7 mL | 13 x 110 | 75005805 |
| 3.5 mL Blood collection tube | 16 x 3.5 mL | 11 x 75 | 75005806 |

◆ Biocontainment certification by Public Health England, Porton Down, UK or TÜV NORD CERT GmbH, Germany.

## HIGHConic II Aluminium Fixed Angle Rotor

45°, $R_{max}$ 126 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro | 10,350 | 15,090 |
| Sorvall ST4 Plus/ST4F Plus | 10,350 | 15,090 |
| Sorvall X1 Pro | 10,350 | 15,090 |
| Sorvall ST1 Plus | 10,350 | 15,090 |

| Description | Rotor capacity (places x volume, mL) | Maximum tube dimensions (Ø x L, mm) | Cat. No. |
|---|---|---|---|
| **Rotor and accessories** | | | |
| HIGHConic fixed angle rotor for 100 mL/85 mL Nalgene Oak Ridge tube ◆ | 6 x 100 mL | 38 x 123 | 75003620 |
| Replacement O-Ring kit | | | 75003058 |
| 85 mL Nalgene Oak Ridge tube (case of 100) | 6 x 85 mL | 38 x 106 | 3118-0085 |
| **Adapters for HIGHConic rotor (each, unless stated)** | | | |
| 50 mL Nalgene Oak Ridge tube | 6 x 50 mL | 30 x 117 | 75003102 |
| 50 mL Conical tube | 6 x 50 mL | 30 x 121 | 75003103 |
| 30 mL Nalgene Oak Ridge tube / 38 mL round tube | 6 x 30 mL | 26 x 110 | 75003094 |
| 16 mL Nalgene Oak Ridge tube | 6 x 16 mL | 18 x 123 | 76002906 |
| 15 mL Conical tube | 6 x 15 mL | 17 x 123 | 75003095 |
| 10 mL Nalgene Oak Ridge tube / 12 mL round tube | 12 x 12 mL | 17 x 95 | 75003093 |
| 6.5 mL Round bottom tube | 12 x 6.5 mL | 13 x 114 | 75003092 |
| 1.5/2 mL Microtube | 24 x 2 mL | 11 x 40 | 75003091 |

## MicroClick 18x5 Aluminum Fixed Angle Rotor

45°, $R_{max}$ 102 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro | 15,000 | 24,652 |
| Sorvall ST4 Plus/ST4F Plus | 15,000 | 24,652 |
| Sorvall X1 Pro | 15,000 | 24,652 |
| Sorvall ST1 Plus | 15,000 | 24,652 |

| Description | Rotor capacity (places x volume, mL) | Maximum tube dimensions (Ø x L, mm) | Cat. No. |
|---|---|---|---|
| **Rotor and accessories** | | | |
| 18 x 5 MicroClick rotor for 5 mL conical and flip top tubes ◆ | 18 x 5 mL | 17 x 62 | 75005765 |
| Replacement O-Ring kit | | | 75005726 |
| **Adapter for MicroClick rotor (set of 2)** | | | |
| 1.5/2 mL Microtube | 18 x 5 | 11 x 45 | 75005756 |

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## Fiberlite F21-48x2 Fixed Angle Rotor

45°, $R_{max}$ 97 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro | 15,200 | 25,055 |
| Sorvall ST4 Plus/ST4F Plus | 15,200 | 25,055 |
| Sorvall X1 Pro | 15,200 | 25,055 |
| Sorvall ST1 Plus | 15,200 | 25,055 |

| Description | Rotor capacity (places x volume, mL) | Maximum tube dimensions (Ø x L, mm) | Cat. No. |
|---|---|---|---|
| **Rotor and accessories** | | | |
| Fiberlite F21-48 x 2 for 1.5/2 mL microtubes ◆ | 48 x 2 mL | 11 x 50 | 75003664 |
| Replacement O-Ring kit | | | 021-489021 |
| **Adapter for F21-48x2 rotor (set of 24)** | | | |
| 1.2 mL PCR tube | | 5 x 20 | 76003750 |

## Microliter 48 x 2 Aluminium Fixed Angle Rotor

45°, $R_{max}$ 98 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro | 15,200 | 25,314 |
| Sorvall ST4 Plus/ST4F Plus | 15,200 | 25,314 |
| Sorvall X1 Pro | 15,200 | 25,314 |
| Sorvall ST1 Plus | 15,200 | 25,314 |

| Description | Rotor capacity (places x volume, mL) | Maximum tube dimensions (Ø x L, mm) | Cat. No. |
|---|---|---|---|
| **Rotor and accessories** | | | |
| 48 x 2 Aluminum for 1.5/2 mL microtubes ◆ | 48 x 2 mL | 11 x 50 | 75003602 |
| Replacement O-Ring kit | | | 75003349 |

## MicroClick 30 x 2 Aluminum Fixed Angle Rotor

45°, $R_{max}$ 99 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro | 14,000 | 21,693 |
| Sorvall ST4 Plus/ST4F Plus | 14,000 | 21,693 |
| Sorvall X1 Pro | 14,000 | 21,693 |
| Sorvall ST1 Plus | 14,000 | 21,693 |

| Description | Rotor capacity (places x volume, mL) | Maximum tube dimensions (Ø x L, mm) | Cat. No. |
|---|---|---|---|
| **Rotor and accessories** | | | |
| 30 x 2 MicroClick for 1.5/2 mL microtubes and spin columns ◆ | 30 x 2 mL | 11 x 50 | 75005719 |
| Replacement O-Ring kit | | | 75005726 |

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# Microliter 30 x 2 Aluminum Fixed Angle Rotor

45°, $R_{max}$ 100 mm

| Centrifuge | Maximum speed (rpm) | Maximum RCF (x g) |
|---|---|---|
| Sorvall X4 Pro/X4F Pro | 15,200 | 25,830 |
| Sorvall ST4/ST4F Plus | 15,200 | 25,830 |
| Sorvall X1 Pro | 15,200 | 25,830 |
| Sorvall ST1 Plus | 15,200 | 25,830 |

| Description | Rotor capacity (places x volume, mL) | Maximum tube dimensions (Ø x L, mm) | Cat. No. |
|---|---|---|---|
| **Rotor and accessories** | | | |
| 30 x 2 Aluminum for 1.5/2 mL microtubes ◆ | 30 x 2 mL | 11 x 50 | 75003652 |
| Replacement O-Ring kit | | | 75003349 |
| **Adapters for MicroClick 30 x 2, Microliter 30 x 2 and Microliter 48 x 2 rotors (set of 30)** | | | |
| 0.5 mL Microtube | | 8 x 44 | 75005753 |
| 0.25 mL Microtube | | 6 x 46 | 75005754 |
| 0.2 mL PCR tube | | 5 x 20 | 75005752 |

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# Connectivity

## SECURE-Spin mode

| Description | | Cat. No. |
|---|---|---|
| **Software and accessories** | | |
| SECURE-Spin mode | | 75009990 |
| Centri-Log Plus Software*† (requires SECURE-Spin mode) | | 75007742 |
| Sample tracking kit* (requires Centri-Log Plus software) | • For floor-standing centrifuges (barcode scanner, holder, and cable) | 75007740 |
| | • For benchtop centrifuges (barcode scanner and cable) | 75007743 |
| Network access kit* (cable) | | 75007741 |

* Product sold separately.
† Centri-Log Plus software version must be at least 2.12.0.

Learn more at **thermofisher.com/centrifuges**

**Laboratory centrifuges contain fluorinated greenhouse gases in hermetically sealed equipment.**

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