

Thermo Scientific  
Sorvall WX<sup>+</sup> Ultracentrifuge Series



performance simplified  
at every turn

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# Ultracentrifugation simplified at every turn

Multiple users. A variety of processing requirements. A range of user experience. To overcome these everyday challenges of a shared laboratory setting, choose the **NEW! Thermo Scientific™ Sorvall™ WX<sup>+</sup> ultracentrifuge**. With up to 100,000 rpm performance in a small footprint to maximize space in your lab. Plus lightweight and fatigue-resistant Fiberlite™ carbon fiber rotors that do not need to be derated over time. And accelerated run set-up with an intuitive, easily accessible touch screen interface and automatic tube balancing. The result? Productivity, safety, and reliability simplified.



Designed to combine speed with safety and ergonomics, the Thermo Scientific Sorvall WX+ ultracentrifuge series provides application flexibility with ease-of-use — all in a compact footprint.

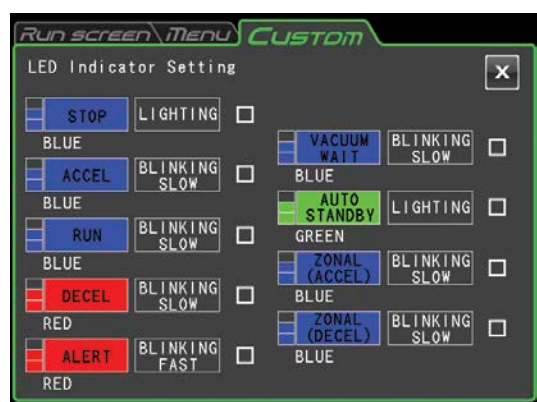
# Performance simplified

## Fast, High Productivity Separations

- Available in 80,000, 90,000 and 100,000 rpm models, offering RCF up to 802,000 x g
- Extensive rotor selection supports labware from 1.5 mL microtubes to 250 mL bottles, providing application flexibility as your lab's research focus evolves
- PLUS the flexibility to use most ultra rotors from other major manufacturers<sup>1</sup> with our open rotor system

## Built-in Safety and Efficiency

- Small footprint is ideal for labs where space is limited, while a low deck height (86.3 cm/33.9 in) makes rotor loading and unloading easy
- Non-bolt-down design greatly simplifies installation and flexibility to relocate within a facility
- Quiet performance (<51 dBA) allows you to work right next to the unit without distraction
- Self-locking rotor system eliminates the need to bolt down the rotor, while providing confidence that the rotor is automatically and securely locked
- Accessible on the front of the unit, the user-friendly touch screen interface puts you in control with set-up and run customization
- Ability to control access in a multi-user environment for security
- Automatic tube balance compensation accelerates sample preparation by allowing visual sample balancing up to 5 mm
- Personalize and monitor instrument status from across the lab with Stat Light, our multi-color, programmable 47 cm/18.5 in long LED bar mounted on the front of the instrument for easy visibility



Personalize Stat Light color and intensity for visual indication of instrument status.

<sup>1</sup> Ask your sales representative for details.

Versatile rotor portfolio addresses your high performance processing applications, accommodating tubes from 0.2 mL to 250 mL — and providing application flexibility as your lab's research focus evolves.

## Applications simplified

### Fast pelleting and density gradient separations

Fixed angle rotors, including lightweight and durable **Thermo Scientific™ Fiberlite™ carbon fiber rotors** which improve ergonomics, backed by a 15-year warranty<sup>2</sup>

- Fatigue-resistance provides structural integrity, eliminating the need to derate or limit the speed over the rotor lifespan
- Corrosion-resistant design protects against damage due to moisture, chemicals, alkaline solutions or other salts in the laboratory
- Lightweight rotors designed to improve ergonomics for a safer work environment and minimize the risk of damage to centrifuge equipment

### Density gradient runs and for locating small pellets at the bottom of a tube

High performance swinging bucket rotors, such as **SureSpin** rotors which offer the convenience and security of loading buckets through the top of the rotor body to maintain delicate gradients and prevent mishanging of buckets.

### Fast lipoprotein and plasmid DNA separations

**StepSaver vertical rotors** streamline sample loading and unloading. Filled sample tubes can be securely contained inside special cartridges, eliminating the need for inconvenient torque wrench procedures.

**NEW! Neo Angle rotors** provide a very steep angle — much greater than fixed angle rotors — which is optimized for CsCl Plasmid DNA separations.

### Biotechnology and pharmaceutical scale-up processes

The **TCF-32 continuous flow rotor** is ideal for multi-liter processing applications requiring high RCFs, including viral separations, particle isolations and vaccine production.

### Batch processing gradient applications with zonal rotors

## Optimize Your Existing Rotor Inventory

The open system on Sorvall WX<sup>+</sup> ultracentrifuges accepts most ultra rotors from other major manufacturers. Ask your sales representative for details.

<sup>2</sup> Subject to Thermo Fisher Scientific's standard limited warranty. See [thermoscientific.com](http://thermoscientific.com) or your sales representative for details.





Now with an intuitive color LCD touch screen, keep operation and programming simple, with an easy-to-read and navigate graphical display at the front of the centrifuge. Access menus and functions all with the touch of a button.

## Operation simplified

### Maximize Productivity with Flexible Control, Set-Up and Run Options

- Eliminate the need for calculating protocol conversions by setting runs for a maximum speed, or to a desired g-force, with automatic RCF/RPM mode
- Save time during run set-up for commonly used protocols by creating up to 1000 programs, along with user ID and comments
- Select rotor from on-board catalog, with key rotor specifications stored for convenient recall
- Perform pulse-runs — quick spins of a few seconds — or step-runs
- Achieve precise control of the net run-time for high-reproducibility separations by starting the run timer when the set speed is attained (conventional run timer is also available)

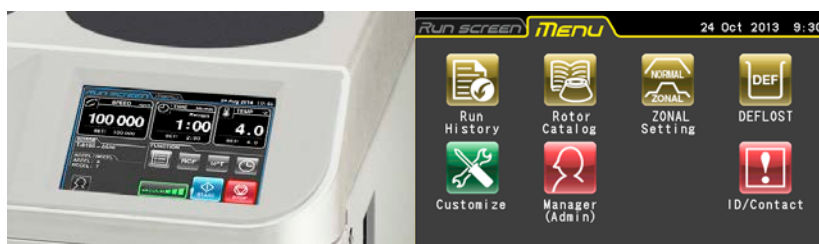
### Focus on Safety and Convenience

- Require an ID code to control user access with the optional lockout feature — ideal for multi-user environments
- Schedule a run to reserve the centrifuge, or delay start and stop times, so samples are ready when needed
- Designed to assist with GMP/GLP compliance
  - Monitor centrifuge run data with optional Log Manager software
  - Recall past operating parameters with recorded histories (up to 5,120 cases)
- Manage rotor life via logs and control individual rotor usage by tracking the number of rotor runs and total spin hours
- Reduce power usage by up to 50% when in idle mode, compared with previous model

### Simulate New Protocols

Compass, a Windows™-based run simulation software included with our ultracentrifuges, allows for development of new separation protocols on a laptop or PC for export to a Sorvall WX<sup>+</sup> ultracentrifuge. The software provides comprehensive help and troubleshooting support for fast and easy development of more efficient centrifugation methods.

- Set run parameters and convert run values
- Calculate k-factors, pelleting times, derating speeds, molecular masses, s-value conversions and crystallization times
- Simulate particle sedimentation and diffusion for complex rate zonal separations



Complete your Sorvall WX<sup>+</sup> ultracentrifuge system with a wide selection of ultracentrifuge tubes.

## Tube selection simplified

The right tube for your application is an important consideration. Choose from our wide selection of tubes to meet your processing requirements:

| Tube Style                  | Tube Volume (mL) |     |      |    |     |     |
|-----------------------------|------------------|-----|------|----|-----|-----|
|                             | 1.5              | 6.5 | 13.5 | 39 | 100 | 250 |
| Open-top Thin-wall Tube     |                  | ●   | ●    | ●  |     |     |
| Open-top Thick-wall Tube    |                  | ●   |      |    |     |     |
| Ultracrimp Tube             |                  | ●   | ●    | ●  | ●   |     |
| Re-Seal Tube                | ●                | ●   | ●    | ●  |     |     |
| Oak Ridge Bottle            |                  | ●   | ●    | ●  | ●   | ●   |
| High Performance Microtubes | ●                |     |      |    |     |     |

All Fiberlite ultracentrifuge rotors ship with one set of tubes.



Protect your investment with comprehensive service and support offerings.

## Service simplified

### Instrument Services from Unity Lab Services

To improve your laboratory's efficiency, you should be free to focus on your work, not burdened with managing instrument service. We provide a complete portfolio of customized, integrated and innovative services and support solutions designed to help you improve productivity, reduce total cost of ownership and ensure compliance throughout your laboratory — from equipment acquisition to disposition.

Protect your investment with a support plan, from first-level extended warranties to comprehensive scheduled care plans, including:

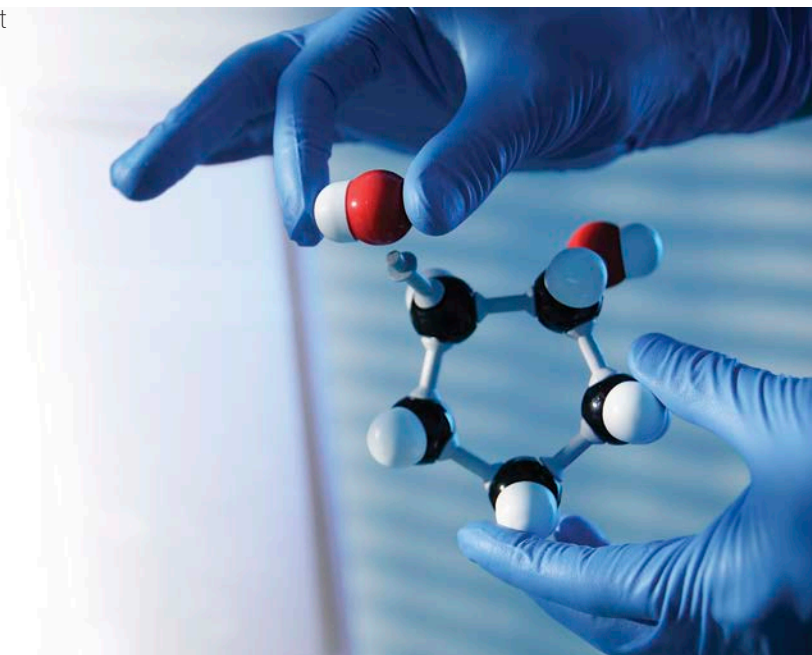
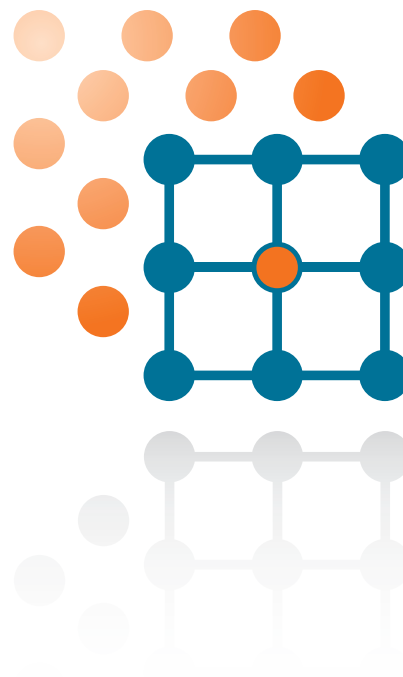
- Priority on-site visits including labor and travel
- Factory-certified parts
- Operational handling error coverage
- New operator assessment
- Repair during qualification services
- On-site preventive maintenance
- Preventive maintenance parts kits
- Firmware/software updates
- Service history tracking
- Unlimited priority telephone support
- Technical reviews
- e-Support online technical resource

Explore all the new ways to protect your instruments at [unitylabservices.com](http://unitylabservices.com)

Let our expertise complement yours.

## Unity Lab Services

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## Rotor specifications

|                              | Cat. No.      | Rotor                                 | Maximum Capacity (mL) | Tube Dimensions (mm) | Maximum Speed (rpm) | Maximum RCF (x g)                  | K Factor                     | Tube Angle (°) |
|------------------------------|---------------|---------------------------------------|-----------------------|----------------------|---------------------|------------------------------------|------------------------------|----------------|
| Fiberlite Fixed Angle Rotors | 096-067135    | <b>F65L-6x13.5</b>                    | 6 x 13.5              | 16 x 76              | 65,000              | 324,000                            | 70.0                         | 30             |
|                              | 096-087051    | <b>F50L-8x39</b>                      | 8 x 39                | 25 x 89              | 50,000              | 266,000                            | 87.0                         | 23             |
|                              | 096-247028    | <b>F50L-24x1.5</b>                    | 24 x 1.5              | 11 x 40              | 50,000              | 280,000                            | 33.0                         | 45             |
|                              | 096-087056    | <b>F37L-8x100</b>                     | 8 x 100               | 38 x 102             | 37,000              | 182,460                            | 168.0                        | 25             |
| Fixed Angle Rotors           | 45621         | <b>T-8100</b>                         | 8 x 6.5               | 13 x 64              | 100,000             | 802,006                            | 17.7                         | 26             |
|                              | 11690         | <b>T-890</b>                          | 8 x 12.5              | 16 x 80              | 90,000              | 692,149                            | 25.1                         | 25             |
|                              | 54356         | <b>TFT 80.4</b>                       | 10 x 4.4              | 11 x 60              | 80,000              | 468,246                            | 25.8                         | 25             |
|                              | 54456         | <b>TFT 80.2</b>                       | 12 x 2.0              | 8 x 51               | 80,000              | 429,643                            | 22.6                         | 25             |
|                              | 08259         | <b>T-1270</b>                         | 12 x 12.5             | 16 x 80              | 70,000              | 448,811                            | 36.3                         | 24             |
|                              | 51411         | <b>T-865</b>                          | 8 x 36                | 25 x 97              | 65,000              | 429,459                            | 51.7                         | 23.5           |
|                              | 11713         | <b>T-1250</b>                         | 12 x 36               | 25 x 97              | 50,000              | 301,032                            | 68.7                         | 24             |
|                              | 08322         | <b>T-647.5</b>                        | 6 x 100               | 39 x 107             | 47,500              | 250,259                            | 121.0                        | 22.5           |
|                              | 11637         | <b>TFT 45.6</b>                       | 40 x 6.0              | 13 x 66              | 45,000              | 238,859 (outer)<br>204,252 (inner) | 41.4 (outer)<br>49.6 (inner) | 20             |
|                              | 11876         | <b>A-621</b>                          | 6 x 250               | 61 x 153             | 21,000              | 66,993                             | 751.0                        | 23             |
| Swinging Bucket Rotors       | 10502         | <b>TH-660</b>                         | 6 x 4.4               | 11 x 60              | 60,000              | 488,576                            | 44.4                         | 90             |
|                              | 54294         | <b>AH-650</b>                         | 6 x 5                 | 13 x 51              | 50,000              | 296,005                            | 53.0                         | 90             |
|                              | 54295         | <b>TH-641</b>                         | 6 x 13.2              | 14 x 89              | 41,000              | 287,660                            | 114.0                        | 90             |
|                              | 79368         | <b>SureSpin 630/36</b>                | 6 x 36                | 25 x 89              | 30,000              | 166,880                            | 219.0                        | 90             |
|                              | 79363         | <b>SureSpin 630/17</b>                | 6 x 17                | 16 x 102             | 30,000              | 166,880                            | 268.0                        | 90             |
|                              | 54284         | <b>AH-629 (36)</b>                    | 6 x 36                | 25 x 89              | 29,000              | 151,243                            | 242.0                        | 90             |
|                              | 54285         | <b>AH-629 (17)</b>                    | 6 x 17                | 16 x 102             | 29,000              | 155,846                            | 284.0                        | 90             |
| Vertical Rotors              | 79240         | <b>StepSaver 70 V6 (8 x 6)</b>        | 8 x 6                 | 13 x 66              | 70,000              | 467,420                            | 8.7                          | 0              |
|                              | 79274         | <b>StepSaver 70 V6 (8 x 2)</b>        | 8 x 2 x 2             | 13 x 45              | 70,000              | 467,420                            | 8.7                          | 0              |
|                              | 79280         | <b>StepSaver 70 V6 (8 x 5.1 QS)</b>   | 8 x 5.1 QS            | 13 x 51              | 70,000              | 467,420                            | 8.7                          | 0              |
|                              | 79243         | <b>StepSaver 65 V13 (8 x 13.5)</b>    | 8 x 13.5              | 16 x 93              | 65,000              | 400,671                            | 12.9                         | 0              |
|                              | 79290         | <b>StepSaver 65 V13 (8 x 6)</b>       | 8 x 6                 | 16 x 76              | 65,000              | 393,120                            | 10.3                         | 0              |
|                              | 79285         | <b>StepSaver 65 V13 (8 x 13.5 QS)</b> | 8 x 13.5 QS           | 13 x 66              | 65,000              | 393,120                            | 12.9                         | 0              |
|                              | 79245         | <b>StepSaver 50 V39 (8 x 39)</b>      | 8 x 39                | 16 x 93              | 50,000              | 241,831                            | 35.8                         | 0              |
|                              | 79277         | <b>StepSaver 50 V39 (8 x 13.5)</b>    | 8 x 13.5              | 16 x 93              | 50,000              | 228,706                            | 22.6                         | 0              |
|                              | 11672         | <b>TV-1665</b>                        | 16 x 6                | 13 x 66              | 65,000              | 414,357                            | 9.8                          | 0              |
|                              | 53289         | <b>TV-860</b>                         | 8 x 35                | 25 x 97              | 60,000              | 340,596                            | 25.2                         | 0              |
| Neo Angle Rotors             | 75003033      | <b>TN-890</b>                         | 8 x 5                 | 13 x 53              | 90,000              | 645,101                            | 10                           | 10             |
|                              | 75003034      | <b>TN-1065</b>                        | 10 x 12               | 16 x 78              | 65,000              | 401,614                            | 23                           | 10             |
|                              | 75003035      | <b>TN-1865</b>                        | 18 x 5                | 13 x 53              | 65,000              | 430,874                            | 15                           | 10             |
| Continuous Flow Rotors       | 45820 + 45835 | <b>TCF-32</b>                         | 430                   |                      | 32,000              | 102,000                            | 35.0                         | n/a            |
|                              | 45830         | <b>Accessory core</b>                 | 940                   |                      |                     |                                    | 106.0                        |                |
| Zonal Rotors                 | 75000008      | <b>TZ-32</b>                          | 1,690                 | n/a                  | 32,000              | 102,000                            | 363                          | n/a            |
|                              | 52358 + 12271 | <b>TZ-28</b>                          | 1,350                 |                      | 28,000              | 83,440                             | 312.0                        | n/a            |



## Ultracentrifuge specifications

| Specifications             | Sorvall WX 100+ Ultracentrifuge  | Sorvall WX 90+ Ultracentrifuge | Sorvall WX 80+ Ultracentrifuge |
|----------------------------|--|--------------------------------|--------------------------------|
| Maximum Speed              | 100,000 rpm  | 90,000 rpm                     | 80,000 rpm                     |
| Maximum RCF                | 802,000 x g (with T-8100 rotor)  | 692,149 x g (with T-890 rotor) | 546,883 x g (with T-890 rotor) |
| Maximum Capacity           | 6 x 250 mL   |                                |                                |
| Drive System               | Imbalance tolerant direct drive; eye balance to within 5 mm  |                                |                                |
| Control                    | Microprocessor   |                                |                                |
| Control Panel              | Touch screen color LCD panel (6.5 in)  |                                |                                |
| Programmability            | 1,000 programs with step-runs  |                                |                                |
| Run Log Database           | Up to 5,120 runs recorded in onboard memory  |                                |                                |
| Data Communication         | USB: Host x 1, Device x 1 / LAN x 1  |                                |                                |
| Accel/Decel Profiles       | 10/11 (10 and coasting)  |                                |                                |
| Speed Range                | 1,000 rpm to max. speed in 100 rpm increments  |                                |                                |
| Speed Control Accuracy     | ±10 rpm (1,000 rpm – max. speed)   |                                |                                |
| Timer                      | 1 min to 999 hours 59 min (with 1 min increments) with HOLD function                                     |                                |                                |
| Temperature Set Range      | +2 to +40 °C   |                                |                                |
| Temperature Accuracy       | ±0.5 °C  |                                |                                |
| Ambient Temperature Range  | +10 to +30 °C  |                                |                                |
| Temperature Control System | Solid-state thermoelectric module refrigeration (CFC/HCFC/HFC-free)                                      |                                |                                |
| Vacuum System              | Oil-rotary vacuum pump with moisture removal function and oil diffusion pump; vacuum of 0.13 Pa          |                                |                                |
| Functions                  | Automatic RCF; $\omega$ 2dt integrator; real time control; controlled user access; rotor life management |                                |                                |
| Dimensions (H x W x D)     | 880 x 790 x 690 mm/ 34.6 x 31.1 x 27.2 in  |                                |                                |
| Work Height of Top Deck    | 863 mm/ 33.9 in  |                                |                                |
| Weight                     | 390 kg/859.8 lb  |                                |                                |
| Heat Output                | 1 kW or below  |                                |                                |
| Noise                      | 51 dBA (running at set speed, under in-house test condition) measured 1 m in front of instrument         |                                |                                |
| Certification              | CE and cCSAus  |                                |                                |

## Ordering Information

| Cat. No. | Description   | Plug                                  |
|----------|---|---------------------------------------|
| 75000100 | Sorvall WX 100+ Ultracentrifuge, 208-240 V, 50/60 Hz, 16/20 A, Single-phase | NEMA plug 6-30P and IEC60309 CEE plug |
| 75000090 | Sorvall WX 90+ Ultracentrifuge, 208-240 V, 50/60 Hz, 16/20 A, Single-phase  | NEMA plug 6-30P and IEC60309 CEE plug |
| 75000080 | Sorvall WX 80+ Ultracentrifuge, 208-240 V, 50/60 Hz, 16/20 A, Single-phase  | NEMA plug 6-30P and IEC60309 CEE plug |

## Accessories

| Cat. No. | Description  |
|----------|--|
| 45910    | Compass Software (included with centrifuge)            |
| 50146146 | HEPA Filter Kit  |
| 75000010 | Real Time Log Manager for Sorvall WX+ Ultracentrifuges |

[thermoscientific.com/ultracentrifuge](http://thermoscientific.com/ultracentrifuge)

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