

9
Cleaning and decontamination
9.7 Cleaning the floorpan

Clean the floorpan using a solution of tepid water and commercially available dishwashing agent.

1. Remove the workplates from the sample chamber.
2. Remove dirt residues and deposits thoroughly.
3. Wipe the floorpan clean using a clean cloth and plenty of clear water.
4. Remove the cleaning liquid from the floorpan and wipe the floorpan surfaces thoroughly clean.



NOTE – Material residues!

After cleaning, make sure that all cleaning materials have been removed completely from the floorpan.

5. Reinstall the workplates.

9.8 Cleaning the protective grid

Fig. 16: The multi-segment protective grid is retained in the installed position between support surface and airduct wall by its own tension.

1. To remove a grid segment [2], push the retaining tab [1] down until the grid segment can be removed from below the counterholder [3] of the wall.
2. To install the grid segment [2], first place it behind the fixed points [4], then push the retaining tab [1] down and against the counterholder [3] of the wall so that the counterholder engages in the tab.



NOTE – Inlet air protection!

Do not operate the device without inlet air protection. Prior to any start-up of the device, make sure that the inlet air protection is installed!

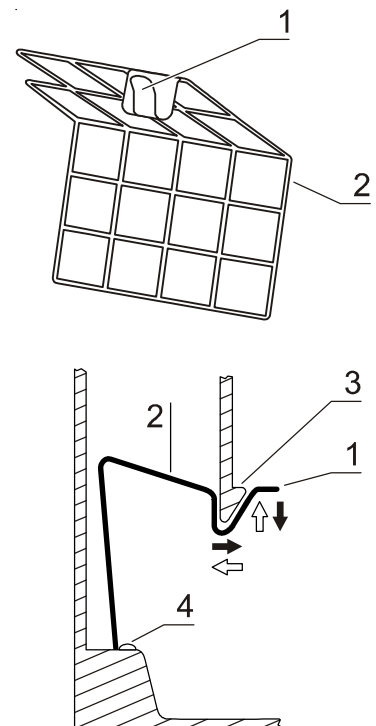


Fig. 16
Protective grid segment

10
Maintenance
10.1 Inspection

The SmartFlow Indicator, the test routine for the biological safety cabinet, determines the cabinet's system status by way of adjusting various device parameters.

- An inspection of the device should be performed if the SmartFlow Indicator displays steady 2 yellow LED's.
- Regardless of the SmartFlow Indicator, the biological safety cabinet should be inspected annually.

The annual inspection comprises the following checks:

- Electrical safety in accordance with national regulations.
- Functional test of the device.
- Checking all components for possible damage.
- Checking the filter state.



NOTE – Perforated plate!

The perforated plate at the sample chamber ceiling serves as the protection of the down-flow filter and prevents refluxing.

While scanning the filter surface for a leak test, the perforated plate must be installed.

- Checking the airflow conditions.
- Repeat test in accordance with EN 12469 / 2000.

10.2 Service
HEPA filters:

As the filter replacement is an interference with the safety system of the device, filters must only be replaced by Thermo Fisher Scientific or by adequately trained and authorized service personnel.



WARNING – Filter replacement!

For any service work in a potentially contaminated section of the biological safety cabinet, a declaration of non-objection by the manufacturer must be presented.

10
Maintenance
10.2.1 Sample chamber illumination

Fig. 18: The sample chamber is illuminated by one or two fluorescent tubes (model MSC 0.9, 1.2, 1.5, 1.8). The spring-loaded sockets of the fluorescent tube [2] are installed to the light dome mounting frame in the sample chamber.

1. Switch the device off, disconnect it from the power supply system and protect it against accidental reconnection.
2. Move the front window down all the way beyond the frame (SmartClean position) to ensure a sufficient gap between window upper edge and light dome.
3. The fluorescent tubes are retained by rotatable sockets. Rotate the tube carefully by 90° into the removal position and remove it from the socket.
4. Insert the new tube and rotate it into the contact position.

10.2.2 Optional UV lamps

Fig. 17: The optional, device-integral UV lamp [1] is installed to the sample chamber ceiling immediately behind the front window. The UV lamp should be replaced after 1500 operating hours.

1. Switch the device off, disconnect it from the power supply system and protect it against accidental reconnection.
2. Move the front window to the maximum opening position.
3. Wear protective gloves to prevent skin fat residues from burning into the lamp tube.
The UV lamp is installed in rotating sockets. To remove, rotate the lamp counter-clockwise to disengage the latch and remove it from the sockets.
4. To install, slide the lamp contact pins into the rotating socket grooves and rotate the lamp clockwise to latch the sockets.

10.3 Retrofitting and repairs

External communication systems, e.g. failure report systems or components for supplying media such as gas solenoid valves, can be retrofitted and integrated into the device control.


NOTE – Retrofitting and repairs!

All retrofitting and repair works are interferences with the safety system of the device. Particularly modifications to the filter system and resulting changes of the airflow may impair personal and material protection. Such work must be carried out only by authorized service personnel.

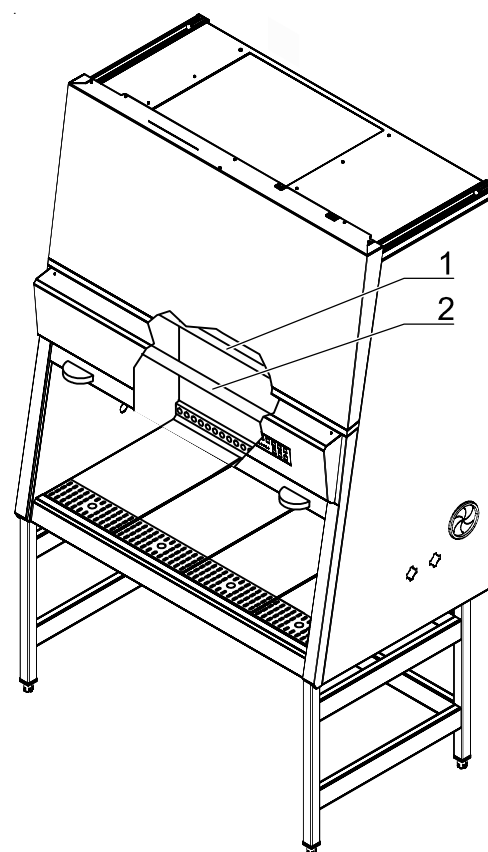


Fig. 17
UV lamp replacement

10

Maintenance

10.4 Exchanging SmartPorts



NOTE – Contamination

In order to prevent contaminated particles escaping from the utility chamber, the unit must be switched on in order to exchange the SmartPorts.

The SmartPorts are removed inwards into the utility chamber.

1. First remove the inner grommet of the SmartPort in the utility chamber inwards from the side panel opening.
2. Then remove the outer grommet of the SmartPort in the utility chamber inwards from the side panel opening.
3. Disinfect both grommets in the utility chamber and take them out of the utility chamber.
4. Insert new outer grommet in the side panel opening from the outside.
5. Insert new inner grommet in the side panel opening from the inside.

11
Disposal
11.1 Disposal procedure

Discarded cabinets or device components contain reusable materials. All components with the exception of the HEPA filters can be discarded after having been thoroughly cleaned and disinfected. The HEPA filters must be discarded in accordance with the applicable national and state regulations for special solid waste.


CAUTION – Contamination hazard!

As the device can be used for processing and treating infectious substances, it may be contaminated.

Prior to disposal, the complete device with filters must be decontaminated by performing a formaldehyde sterilization!


Recyclable materials!

Component	Material
Printed circuit boards	Enclosed electrical components coated with various plastics, mounted on epoxy resin-bound boards.
Plastic components, general	Note material labeling
Exterior housing	Steel, painted
Device backpanel	Stainless steel/steel, painted
Front window	Multi-layer safety glass
Operating panel and indicator foil	Polyethylene
Workplates	Stainless steel
Armrests	Stainless steel
Diffusor	Aluminium, anodized

11**Disposal****WEEE Compliance:**

This product is required to comply with the European Union's Waste Electrical & Electronic Equipment (WEEE) Directive 2002/96/EC. It is marked with the following symbol:



Thermo Fisher Scientific has contracted with one or more recycling/disposal companies in each EU Member State, and this product should be discarded or recycled through them. For further information on Thermo Scientific's compliance with these Directives, contact the recyclers in your country, and information on Thermo Scientific products which may assist the detection of substances subject to the RoHS Directive at www.thermo.com/WEEERoHS.

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Technical data

Dimensions					
Description		MSC 0.9	MSC 1.2	MSC 1.5	MSC 1.8
Exterior dimensions					
Width	mm	1000	1300	1600	1900
Depth	mm	802			
Height	mm	1522			
Interior dimensions					
Width	mm	900	1200	1500	1800
Depth	mm	630			
Height	mm	780			
Front window					
Working position	mm	200			
Opening max.	mm	535			
Working area height, fixed height stand					
Seat position	mm	750			
Stand height, fixed height stand					
Stand	mm	680			
Side wall feed throughs					
Diameter	mm	23			
Distance lower edge	mm	227			
SmartPort feed throughs					
Diameter	mm	79			
Distance lower edge	mm	290			
Distance from backpanel					
Bushing 1	mm	275			
Bushing 2	mm	376			
SmartPort	mm	200			

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Technical data

Volume, weights, and loads					
Description		MSC 0.9	MSC 1.2	MSC 1.5	MSC 1.8
Volume					
Unit volume	m ³	1.1	1.4	1.7	2.1
Floorpan	l	15	20	25	30
Weights					
Cabinet	kg	170	200	230	280
Stand	kg	24	26	28	30
Loads					
Max. load per working area module	kg	25			
Max. load on overall working area	kg	50			

Ambient conditions					
Description		MSC 0.9	MSC 1.2	MSC 1.5	MSC 1.8
Temperature					
Max. ambient temperature during operation	°C	40			
Min. ambient temperature during operation	°C	10			
Humidity					
Max. humidity / operation	% r.H.	90, non-condensing			
Max. gumidity / storage	% r.H.	95			
Heat dissipation to environment					
Room temperature 20 °C	kJ/s	0,15	0,2	0,28	0,34
Room temperature rise					
Above room temperature with window closed	°K	< 2	< 2	< 2	< 2
Ergonomics					
Noise level	dB(A)	55	59		
		The noise level was determined in accordance with EN ISO3744. The sound pressure level was measured at a distance of 1 m in front of the working opening. The measurement uncertainty is within a range of ± 2 dB.			

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Technical data

Electrical data					
MSC-Advantage		MSC 0.9	MSC 1.2	MSC 1.5	MSC 1.8
Voltage					
Rated voltage	V	1/N/PE AC, 230 V - 50-60 Hz			
Blower voltage	V	48 V / DC			
Current					
Power consumption max.	A	7.3		8.7	
Leakage current IEC1010, EN 61010	mA	< 3.5			
Motherboard fusing	A	2 x T 16 A			
Outlet fusing	A	2 x T 5 A			
On-site fusing	A	Circuit breaker B16 / Fuse T 16 A			
Power					
Power input max.	W	1700.0		2000.0	
Protection					
Protection class		I			
Protection type		IP 20			
Overvoltage category (IEC 1010, EN 61010)		II			
Contamination degree (IEC 1010, EN 61010)		2			
Connecting lines					
Mains connection		Cable (3.7 m)			

12
Technical data

Airflow system					
Description				MSC 0.9	MSC 1.2
Airflows / Airflow velocities					
Inflow	m/s	0.45			
Downflow	m/s	0.32			
Air volume					
Overall volume flow	m³/h	914	1218	1523	1827
Downflow volume flow	m³/h	622	829	1037	1244
Exhaust air volume flow	m³/h	292	389	486	583
Filters					
Type		HEPA (H 14 according to DIN EN 1822)			
Material		Glas fiber fleece			
Separability in MPPS	%	99.995			
Separability at 0,3 µm particle size	%	1.2 Filtrai	99.999		
Downflow					
Width	mm	915	1220	1525	1830
Depth	mm	457			
Height	mm	94			
Exhaust air					
Width	mm	610	610	610	915
Depth	mm	457			
Height	mm	117			

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Device log

[illegible]

ThermoFisher
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Notification no.

Notification date

Page
1/1

Declaration

Thermo Electron LED GmbH
Customer Center Germany
Robert-Bosch-Str. 1
D-63505 Langenselbold

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Telefax 0 8001 112 114
www.thermofisher.com

Invoice recipient / Customer no.			Location address / Forwarding address		
Call type	Region	ID of technician	Name of technician		Appointed date
Order date	by	Customer order no. / PO		Service contract no.	
Device description (Type)		Material no. (order no.)	Date of last maintenance	Date of delivery	Customer cost center
Equipment no. (Factory no.)	Serial no.	Service device no.	Date of calibration	Date of start-up	Customer inventory no.

Safety Declaration

Dear customer,

When using biological and chemical agents within and outside of devices, hazards to the health of the operating personnel may be present and contamination of the surroundings of the device may occur when service or repair works are carried out. Within the scope of national and international legal regulations, such as

- responsibility of a company for the protection of its employees,
- responsibility of the operator for the operational safety of devices,

all possible hazards must absolutely be prevented. Prior to any calibration, service, and repair works, prior to any relocation of a device, and prior to the shut-down of a device, the device must be decontaminated, disinfected, and cleaned as required by the work to be carried out.

Therefore, we ask you to fill in this certificate of decontamination before you start with the required work.

Yours sincerely,
Thermo Electron LED GmbH

Works to be carried out (please mark where applicable)

Prevented maintenance	<input type="checkbox"/>	Filter replacement	<input type="checkbox"/>
Repair work	<input type="checkbox"/>	Transfer to new location	<input type="checkbox"/>
Calibration	<input type="checkbox"/>	Transport	<input type="checkbox"/>

Declaration of possible contamination (please mark where applicable)

The device is clear of biological material	<input type="checkbox"/>	The device is clear of dangerous chemical substances	<input type="checkbox"/>
The device is clear of radioactivity	<input type="checkbox"/>	The device is clear of other dangerous substances	<input type="checkbox"/>
The device is clear of cytostatic agents	<input type="checkbox"/>		

Certification

Prior to carrying out the required work, we have decontaminated, disinfected, and cleaned the device as described in the operating instructions of the device and in accordance with nationally applicable regulations. The device does not present any hazards.

Note

Date, legally binding signature, stamp

Revision 1 Thermofisher certified: 18.08.08 MW Status - Approved Ident-Nr. 50077599E - File name: P50077599E.pro



Internet: <http://www.thermofisher.com>

Iškarpą iš gamintojo puslapio:

[MSC-Advantage™ Class II Biological Safety Cabinets \(thermofisher.com\)](https://thermofisher.com)

Thermo Scientific™

MSC-Advantage™ Class II Biological Safety Cabinets



Catalog number: 51025411

Related applications: [Biological Safety Cabinets Clean Benches](#)
[SARS-CoV-2 Pathogen Research Solutions](#)
[Technical Support](#)[Customer Service](#)

Conserve energy with Thermo Scientific™ MSC-Advantage™ Class II Biological Safety Cabinets, which combine smart design and extraordinary value with best-in-class energy efficiency, reliability and usability resulting in an overall improvement to operation and maintenance. Units feature 60% less energy consumption and heat output. Cabinets are certified to EN 12469 safety standard.

Product Overview

Documents

Catalog Number	Specifications	Unit Size	Width (English) Interior	Width (Metric) Interior
51025411	Full specifications	Each	4 ft.	1.2 m
51025413	Full specifications	Each	6 ft.	1.8 m
51028225	Full specifications	Each	2.95 ft.	0.9 m
51028226	Full specifications	Each	4.92 ft.	1.5 m

Catalog Number	Specifications	Unit Size	Width (English) Interior	Width (Metric) Interior
	Certifications/Compliance	EN 12469, by TÜV Nord, LNE (0.9 and 1.2m). EN 12469, by TÜV Nord (1.5 and 1.8m)		
	Width (Metric) Interior	1.5 m		
	Product Type	Biosafety Cabinet		
	Noise Level	<59 dBA		
	Receptacles	Two Double, Left and Right Side		
	Width (English) Exterior	62.9 in.		
	Exhaust Air Filter	HEPA H 14 EN 1822, 99.995% at 0.3µm Particle		

Catalog Number	Specifications	Unit Size	Width (English) Interior	Width (Metric) Interior
	Green Features	Energy efficient		
	Width (Metric) Exterior	160 cm		
	Energy Consumption (Reduced Flow Mode)	<70 W		
	Ports	TUV-approved		
	Width (English) Interior	4.92 ft.		
	Height (Metric) Exterior	152 cm		
	Depth (Metric) Exterior	80 cm		

Catalog Number	Specifications	Unit Size	Width (English) Interior	Width (Metric) Interior
	Voltage	230 V		
	Energy Consumption (Operating Set Point)	280 W		
	Unit Size	Each		

Showing 4 of 4
Save to list

Features:

- Available in 90cm, 120cm, 150cm and 180cm
- With microprocessor control 1.3 Valdymas
- Large front-panel display (easily visible from seated position) provides constant readout of downflow and inflow velocities and filter usage status
- Exclusive Performance Factor monitoring system advises when cabinet service is needed
- Proprietary window opens to 20cm working height, 53.5cm maximum height, easily lowers for interior cleaning
- Ergonomically angled window is sloped at 10° for better comfort and reduced operator fatigue
- Unique airflow technology and intelligent motor design dramatically improve energy efficiency, operation and serviceability; provide excellent sample protection
- SmartPort: T"UV-approved, safe, clean method for vacuum tubing and cables routing method through the side wall of the biological safety cabinet
- Supply/exhaust air filter: HEPA H 14 EN 1822, 99.999% at 0.3µm particle size

Construction:

- Front-accessible components allow for quick change-outs of HEPA filters and other components Quiet operation at <55dBA enables a comfortable working environment
- Divided stainless-steel work tray removes easily for cleaning or autoclaving
- Standard armrests designed to prevent accidental blocking with coat sleeves
- Very large work surface (0.56m² or 0.84m²) improves productivity
- Smooth components throughout the cabinet virtually eliminate risk of injury during routine cleaning, servicing or maintenance

Certifications/Compliance

- Fully compliant with the EN 12469 safety standard as independently tested and certified by TUV Nord

Ordering Information:

Accessories include programmable UV light, one-piece work tray, stand options, Ergolign saddle stool, free-standing floor shelf. Not available for sale in North America.

Highlighting innovative design features
and useful applications information for
Thermo Scientific Biological Safety Cabinets.

Thermo
S C I E N T I F I C

smart notes

► design and innovation

LAMINAR AIRFLOW PRODUCTS

SMARTNOTE 1



Q A

Why is a dual blower system better than a single blower system?

A dual blower system ensures personal and product protection, not only on the day of the biological safety cabinet's certification, but every day it is in use.

The balance of inflow and downflow is critical in providing both the personal and product protection characteristic of the Class II biological safety cabinet. Loading of the HEPA filters over time requires regular adjustment of airflows to maintain performance and protection. Traditional biological safety cabinets require the adjustment of a manual damper to balance inflow and downflow, whereas Thermo Scientific biological safety cabinets balance the air automatically through the use of their unique dual blower system.



Why Thermo Scientific Biological Safety Cabinets?

1.4 Oro srutas
2 nepriklausom varikli darbo
schema

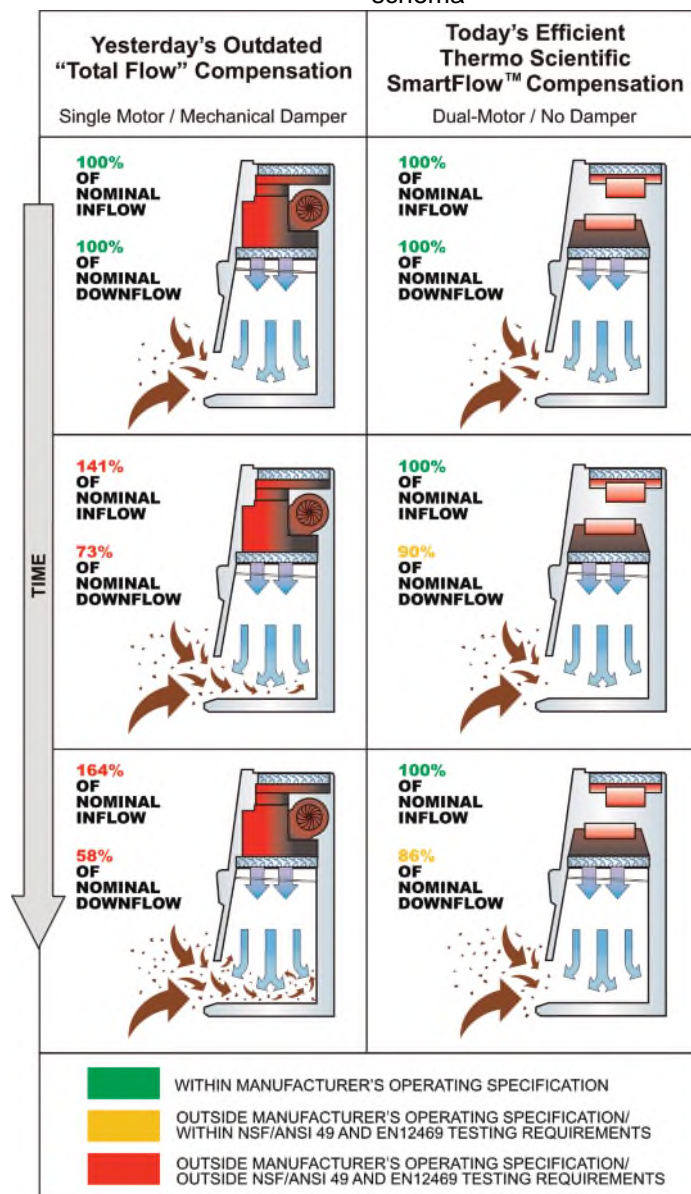
Yesterday's Outdated Approach

Speed adjustment on a single motor/blower biological safety cabinet only allows adjustment of the total airflow, which is then divided into downflow and inflow by use of a manual air damper. Single motor designs can only maintain total flow without consideration for the allocation of the airflow into the work area or out of the exhaust stream. This outdated design requires a manual damper to adjust the airflow balance, and cannot adjust in real-time to filter loading or airflow blockage. Because this damper is only adjusted during annual certifications, there is greater potential of airflow balance disruptions during routine use of the cabinet.

Today's Thermo Scientific SmartFlow Approach

Thermo Scientific biological safety cabinets' advanced **SmartFlow™** design uses a dual blower system where the exhaust blower controls and maintains inflow in real-time, assuring a higher degree of personal protection. Simultaneously, the downflow blower automatically balances the downflow air stream as the inflow adjusts, eliminating the need for a manual damper while providing superior product protection.

- ▶ This Thermo Scientific dual blower combination exceeds NSF/ANSI49 and EN12469 requirements – providing constant **confidence and security of real-time airflow balance** that is critical to maintaining both **cleanliness and containment!**



The advantage of the dual blower based Thermo Scientific SmartFlow design is shown here. As the filters load, the total flow compensating/ system with mechanical damper (left) results in increasingly divergent downflow and inflow, while the SmartFlow systems (right) remain within the validated performance envelope. Brown arrows and particulates depict the loss of product protection over time as the airflow balance changes due to filter loading.

See how the Thermo Scientific SmartFlow dual motor design optimally controls airflow velocities.

Learn more at www.thermoscientific.com/bsc

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PFBSCSMARTNOTE01

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Part of Thermo Fisher Scientific

PCR UV Cabinets and Workstations

Ideal for your sample preparation

2.1. Boksas tinka PGR (PCR) mišinio parengimui

- Up to 3 shortwave UV light sources
- With or without three-stage HEPA filter
- Different sizes to meet each individual need



PCR UV Cabinets and Workstations

Systematic protection against contamination

Those who work with PCR technologies, must ensure an effective protection against the unintended transfer of nucleic acids. Analytik Jena offers a complete line of UV PCR systems, which offer excellent performance: The combination of short-wave UV radiation and antimicrobial metal surfaces reduce the risk of PCR contamination considerably.

In addition to standard PCR UV² models, the PCR UV³ HEPA systems with integrated **three-stage filters are available**. The equipment allows efficient use of laboratory space and ensures an exceptionally productive workplace that is suitable for a variety of activities - eg for sample preparation, separation of nucleic acid and PCR or real-time PCR setup.

Features

- Up to three built-in shortwave (254 nm) UV tubes for decontamination between experiments
- **Timer sets UV exposure up to 12 h**
- Safety shut-off switch automatically turns the UV light off when door is opened
- Keylock prevents accidental exposure of samples to UV
- Unique, easy-clean antimicrobial coating on the stainless steel and aluminum surfaces
- Hinged door flips up for easy access to the work area
- Built-in power outlets for operation of equipment inside the work area
- Two shelves allow placement of small equipment
- MAKROLON® panels block UV below 400 nm
- With or without three-stage HEPA filter
- Different sizes: Cabinet or Workstation to meet each individual need



PCR UV² Cabinet & Workstation

2.1 Paskirtis

Two styles are available: The standard PCR UV and the PCR UV HEPA systems.

Two sizes are available: The cabinet features a smaller work area than the workstation.

High efficient UV decontamination

All PCR UV Cabinets and Workstations create an ideal environment for preparing PCR master mixes and other reactions by reducing any possible sample contamination significantly by the built-in 254 nm UV tubes for inactivation of DNA / RNA between experiments.

Thereby, the use of UV irradiation is a reliable standard laboratory practice and reduces surface and airborne contaminants in the chamber. Maintain a clean work area to save time and reduce the repeat experiments.

The hoods include a timer to control UV decontamination of the chamber, by simply setting the desired time. A key operates the UV providing a means for preventing accidental UV irradiation of samples.

Both types feature a safety shut-off switch, which automatically turns the UV light off when the door is opened, protecting users from UV exposure.

- Decontaminate apparatus and reagents within minutes
- Integrated timer to set UV irradiation from 5 min up to 12 h
- Important features for user and sample protection

Perfect antimicrobial protection

Additional contamination control is provided with a coated stainless steel and aluminum design that maintains antimicrobial efficacy. The durable coating material is a safe and natural agent for continuous protection. Resultant the easy-clean surface is stain as well as fingerprint resistant and suppresses the growth of bacteria, molds and fungi on surfaces.

Efficient work area

PCR UV systems are designed for placement of large instruments on the work area or small items on the two removable shelves. Overhead white light brightly illuminates the work area and up to four built-in power outlets allow operation of additional equipment within the chamber. Furthermore the non-ventilated, circulation free chamber limits exposure of equipment to an open lab environment.

Cabinets and larger workstations sizes are available for both the PCR UV² and UV³ HEPA styles.

2.2.4. Valdymas išorėje esančiu mikroprocesoriniu bloku



PCR UV³ HEPA Cabinet & Workstation

Sophisticated platform for any sample preparation

All Analytik Jena Cabinets and Workstations combine a whole slew of important features for contamination-sensitive applications:

1 | Three-stage filter system:

- Pre-filter
- Carbon-filter
- HEPA Filter
- Plus UV to decontaminate

2 | Antimicrobial coated surface prevents contamination

3 | MAKROLON® panels block UV below 400 nm

4 | Built-in power outlets for operating equipment inside

5 | Large working area

6 | Power switches are conveniently located

7 | UV timer

2.2.5. bokso valdymo blokavimas raktu

8 | Lock prevents accidental work

9 | Shortwave 254 nm UV light for decontaminating the chamber

10 | Two removable shelves for placement of small objects

11 | Door flips open for easy access to interior; UV shuts off when door is open

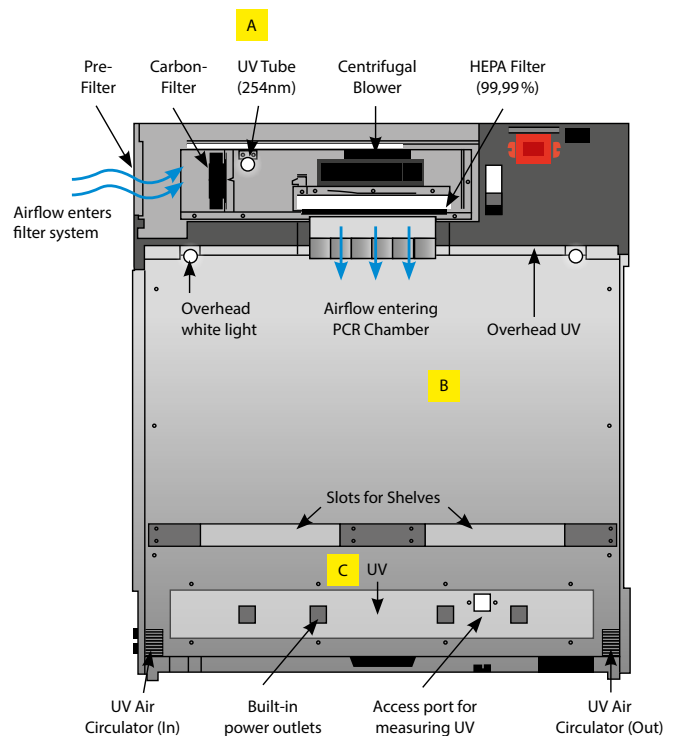
PCR UV³ HEPA feature

Next to all specifications noted above the PCR UV³ Cabinet & Workstation also includes a three-stage filter module with built-in 254 nm shortwave UV light source. The system circulates filtered and decontaminated air into the PCR chamber. This positive pressure laminar flow can be set to high or low, whereby a honeycomb metal grid guarantees a stabilized air flow.

- Pre-filter helps to preserve the life of other filters by capturing large dust particles
- Activated carbon filter specializes in capturing ozone, gases, odors and smoke
- HEPA filter provides a barrier (99.99%) against dust, bacteria and mold down to 0.3 microns

A side access with a slide out design makes changing filters and UV tube easy. Protection is given due to the automatic safety switch, which shuts UV off when the side door is opened.

The PCR UV³ HEPA drawing (below) front cut-out view demonstrates the air flow through the filter module. These models supply three UV sources (UV³) which are indicated in the drawing: filter area (A), chamber (B) and UV/air circulator (C).



PCR UV³ HEPA drawing

Technical data

	PCR UV ²		PCR UV ³ HEPA	
	Cabinet	Workstation	Cabinet	Workstation
UV source	<ul style="list-style-type: none"> Two 254 nm shortwave UV sources Chamber and UV/air circulator 		<ul style="list-style-type: none"> Three 254 nm shortwave UV sources Chamber, UV/air circulator and filter module 	
<u>White light</u>	2.2.3 Apšvietimas		Overhead white light brightly illuminates the work area	
Three-stage filter module	-	-	<ul style="list-style-type: none"> Pre-filter Carbon filter HEPA filter 	<ul style="list-style-type: none"> Pre-filter Carbon filter HEPA filter
Power outlets	2	4	2	2
Shelves	2	2	2	2
Design	Antimicrobial coated aluminum			
Dimensions	222 x 102 mm	330 x 107 mm	222 x 102 mm	330 x 107 mm
Timer	UV timer	UV timer	UV timer	<u>UV timer</u>
Adjustment 1	5 – 60 minutes in increments of 5 minutes			
Adjustment 2	1 – 12 hours in increments of 15 minutes			
Safety shut off	Automatic switch off of ultraviolet light, when door is opened			
Design	Stainless steel, aluminum and MAKROLON®			
Interior	<ul style="list-style-type: none"> Uniquely coated stainless steel and aluminum design and easy-clean surface Durable coating material contains silver ions: <ul style="list-style-type: none"> Providing continuous antimicrobial protection Stain and fingerprint resistant Listed by Food and Drug Administration (FDA) and Environmental Protection Agency (EPA) as an antimicrobial agent Suppresses growth of bacteria, molds and fungi on surfaces 			
Interior	Aluminum powder coated			
Door and side panel	MAKROLON® panels block wavelength below 400 nm			
Dimensions	(W x D x H)	(W x D x H)	(W x D x H)	(W x D x H)
Exterior [mm]	544 x 610 x (729)	737 x 610 x (729)	544 x 610 x (826)	737 x 610 x (826)
Interior [mm]	500 x 544	706 x 544	500 x 544	706 x 544
Weight [kg]	40.8 kg	46.7 kg	57.6 kg	63.5 kg

MAKROLON® is a registered trademark of Bayer AG

Order information

Order number	Description	Order number	Description
849-00001-02	PCR UV ² Cabinet, 230 V (UK plug)	849-00005-02	PCR UV ² Workstation, 230 V (UK plug)
849-00001-03	PCR UV ² Cabinet, 230 V (Euro plug)	849-00005-03	PCR UV ² Workstation, 230 V (Euro plug)
849-00001-04	PCR UV ² Cabinet, 115 V (US plug)	849-00005-04	PCR UV ² Workstation, 115 V (US plug)
849-00001-05	PCR UV ² Cabinet, 100 V (US plug)	849-00005-05	PCR UV ² Workstation, 100 V (US plug)
849-00002-02	PCR UV ³ HEPA Cabinet, 230 V (UK plug)	849-00006-02	PCR UV ³ HEPA Workstation, 230 V (UK plug)
849-00002-03	PCR UV ³ HEPA Cabinet, 230 V (Euro plug)	849-00006-03	PCR UV ³ HEPA Workstation, 230 V (Euro plug)
849-00002-04	PCR UV ³ HEPA Cabinet, 115 V (US plug)	849-00006-04	PCR UV ³ HEPA Workstation, 115 V (US plug)
849-00002-05	PCR UV ³ HEPA Cabinet, 100 V (US plug)	849-00006-05	PCR UV ³ HEPA Workstation, 100 V (US plug)



Thermo Scientific™ General Purpose Centrifuge Series

To select the right centrifuge for your lab, choose an option at the top of the screen, or click below to see what's new

Let's get started





Continuous innovation

New industrial design with improved ergonomics for ease of use and touch screen capabilities to help save you time

View Graphical Interface



State-of-the-art touchscreen interface

View safe operation



Safety and ergonomic enhancements

View enhancements



Enhancements to make your day in the lab easier



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Graphic User Interface

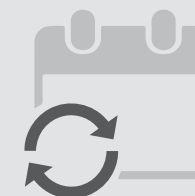
Modern, intuitive touchscreen interface



User-intuitive screen enables easy access and programming for faster results

[View](#)

New Lighthouse Mode provides run status visibility from across the lab, now with adjustable-volume alerts

[View](#)

Scheduling features and preventative maintenance queues to help reduce downtime

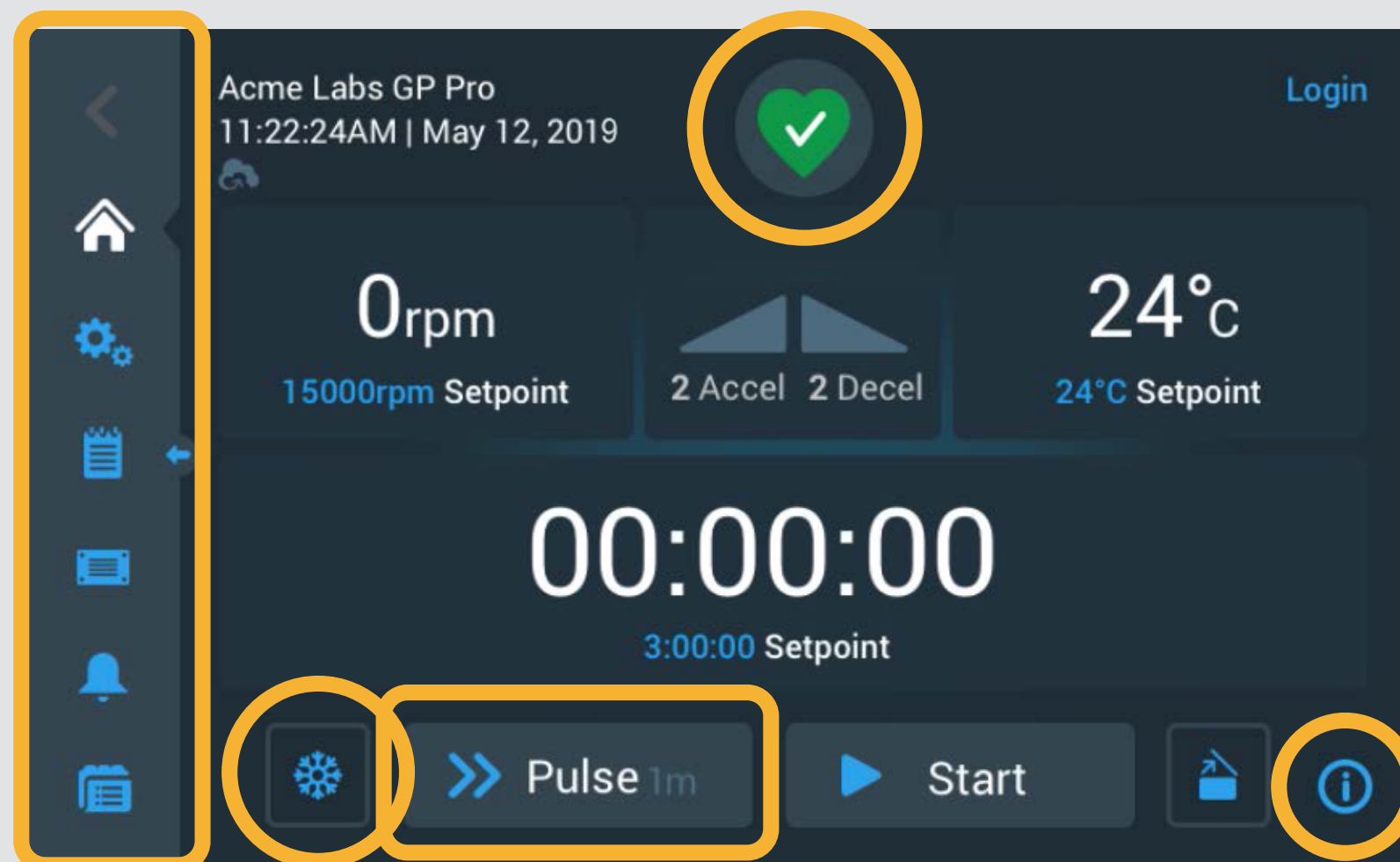
[View](#)



Simple touchscreen programming

Click below to discover the new touchscreen features

- Easily accessible **menu bar** ➤
- Keep an eye on **centrifuge health** ➤
- Time-saving **pre-temp** button ➤
- Customize **quick spins** ➤
- Access **helpful info** with one touch ➤

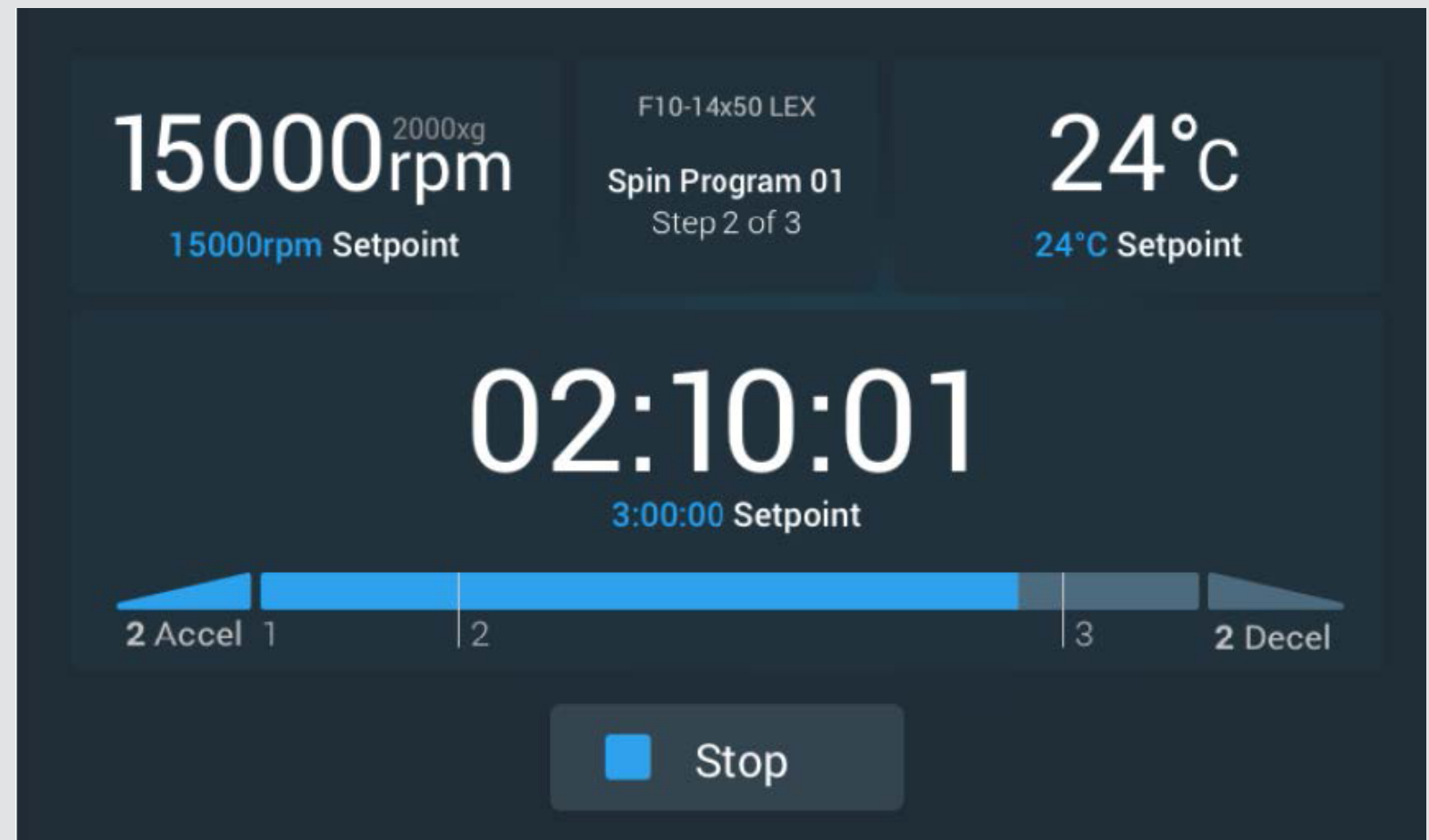




Lighthouse mode

Track progress without having to step away from your work

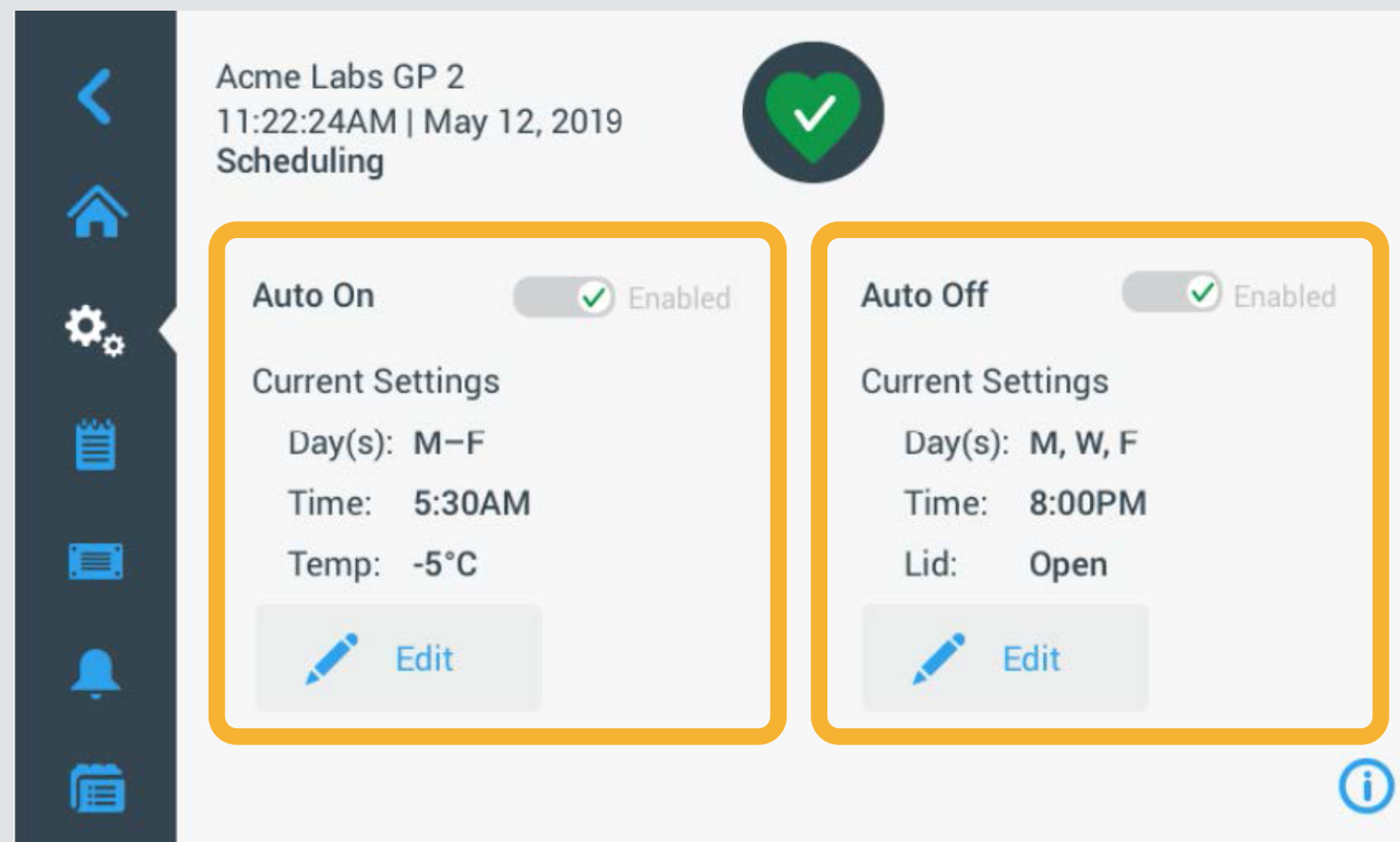
- Easily **monitor your run progress** from across the lab with enlarged time and tracker bar
- Plus, **end-of-run alerts** can be programmed with customized volume settings





Smart controls

- Pre-programmed start-up of compressor for temperature-ready centrifuge as soon as you arrive in the lab >
- Shut-down programming can extend compressor life and reduce energy costs >





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Safety features

Improved reach-in during rotor installation for safer loading and unloading

Hand grip cue on the lid indicates the easiest and best one-handed closure location

3.8 Centrifugos dangtis

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

[View](#)[View](#)



Enhancements

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

[View](#)

Front USB port for easier plug in and data transfer

[View](#)

Other new benefits include:

- compliance with most-recent applicable regulatory and safety standards
- available energy-saving settings
- 23 rotor options to choose from





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Consistent performance

Thermo Scientific technologies designed for solid performance and consistent results in a wide range of applications

**View
performance**



Broad choice of speed, capacity and application

**View
Auto-Lock™**



Simple, fast rotor exchange

**View
Fiberlite™**



Outstanding rotor ergonomics and performance

**View
ClickSeal™**



One-handed biocontainment closures



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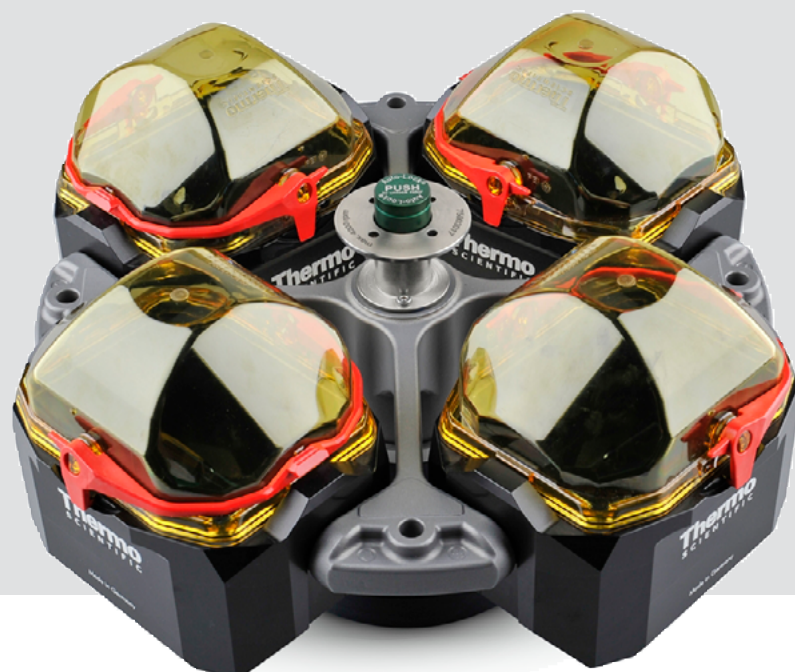
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Flexible performance with more than 20 rotor options

Achieve faster results with the ability to hold up to 196 blood tubes, 40 x 50 mL conical tubes, or 24 microplates in one run



- With fixed-angle **rotor speeds over 25000 x g**, and swinging buckets rotor speeds over 6000 x g, even the toughest separations can be completed better and faster ➤
- **Motorized lid latch** reduces closure time and is easy to operate/handle ➤
- **Slide-coat finish** on swinging buckets rotors reduces the need for lubrication, for more consistent separations and less chance of grease contamination ➤





Auto-Lock™ Rotor Exchange

Helps save time. Faster answers.

3.6 Rotoriaus nu mams

- Secure, ergonomic push-button rotor exchange in as little as 3 seconds
- Trouble-free installation and removal with [no tools required](#)
- [Full chamber access](#) for cleaning convenience and minimizes risk of drip tray contamination
- [Flexibility to quickly switch between applications](#) and evolve with the changing needs of your laboratory



Click below to learn how Fiberlite™ Rotors let researchers focus on their work – worry-free

1

Biocontainment



2

Design



3

Performance



4

Ergonomics



5

Value



Fiberlite™ Carbon Fiber Rotors

Outstanding ergonomics and performance

Lighter materials, advanced designs and industry experience all contribute to the development of superior rotor products with better performance, efficiency and built-in safety features



5 Ways

Fiberlite™ Rotors let researchers focus on their work – worry-free

1**2****3****4****5**

1 Biocontainment

- Fiberlite™ Rotor / lid combinations, and liquid containment annulus offer features that protect the user, the centrifuge and the samples from hazardous contamination
- Biocontainment certified by Public Health England, Porton Down, UK



5 Ways

Fiberlite™ Rotors let researchers focus on their work – worry-free

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2

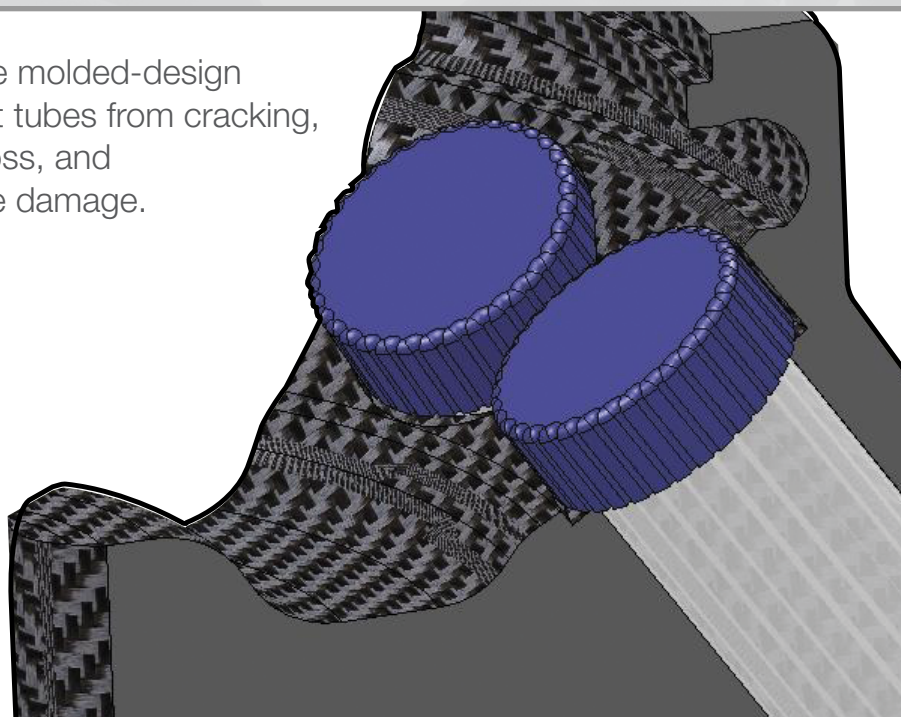
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Innovative molded-design to protect tubes from cracking, sample loss, and centrifuge damage.



2 Design

- Corrosion-resistance and fatigue-resistance maintain the rotor's structural integrity for outstanding durability
- Fiberlite™ Rotors are designed to “unwind” rather than split or break, so your centrifuge is better protected from damage in the unlikely event of a rotor failure
- Carbon fiber offers a unique ability to mold each cavity to perfectly fit tubes, bottles and other consumables, enabling faster spins for tougher separations



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5 Ways

Fiberlite™ Rotors let researchers focus on their work – worry-free

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Time savings with carbon fiber rotors

Acceleration and deceleration rate comparison of 6 x 250 mL capacity floor model rotors*

Fiberlite™ Carbon
Fiber Rotor 1:35/1:15

Savings
(2:55 minutes)

Aluminum rotor

3:45/2:00

Accel/decel rates

3 Performance

- Thermo Scientific™ Fiberlite™ Rotors are each balanced and tested before they leave the factory for precision performance
- Automatic rotor recognition eliminates the need for manual input**
- Fiberlite™ Rotors can reach higher speeds than metal equivalents, improving separations in tubes such as 15 or 50 mL conicals

* Based on a comparison with manufacturers' published specifications.

** After reaching speeds of 200 rpm; please see manual for details.



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5 Ways

Fiberlite™ Rotors let researchers focus on their work – worry-free

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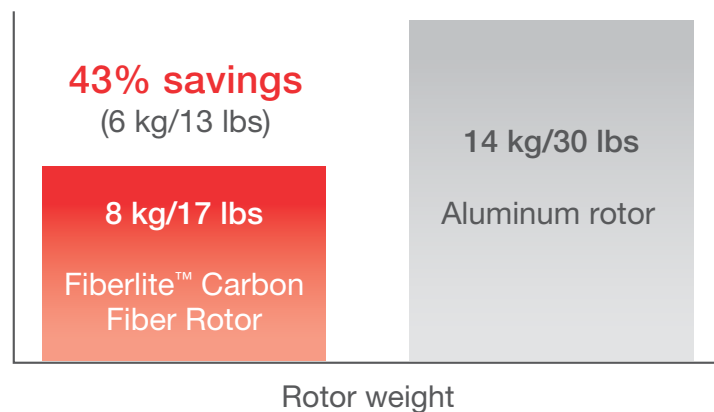
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Weight savings with carbon fiber rotors

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



4 Ergonomics

- Auto-Lock™ allows push-button rotor exchange in as little as 3 seconds with no tools or complicated procedures required
- Carbon fiber is lighter in weight allowing for easier lifting in and out of the centrifuge
- Unique integrated handle design allows for easy gripping to exchange rotors for a variety of applications
- Easy rotor exchange simplifies cleaning and disinfecting procedures

* Based on a comparison with manufacturers' published specifications.



5 Ways

Fiberlite™ Rotors let researchers focus on their work – worry-free

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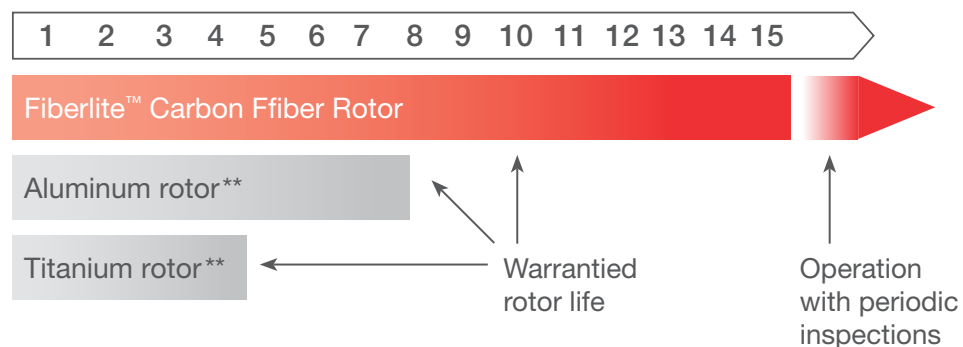
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Warranty with carbon fiber rotors

Average warranty periods for metal rotors compared with Fiberlite™ Carbon Fiber Rotors*



5 Value

- On-site clinics and maintenance are available to ensure proper use and care, extending the life of your rotors
- Our continuously improving rotor designs have increased the capacities available on the same size centrifuge, resulting in outstanding efficiency and throughput across the range
- Industry leading 15 year warranty

* Average warranty periods were calculated based on industry average of years an aluminum or titanium rotor may be covered under warranty per manufacturers' published specifications.

**Warranty coverage may vary by rotor. Please refer to manufacturer for specific warranty coverage for each rotor.



3.7. Biologinio saugumo dangteliai

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
- Simple operation for all laboratory users, eliminating multi-turn screw caps and complicated high pressure clips
- Biocontainment certification by Public Health England, Porton Down, UK





Maximize capacity. Higher quality pellets.

There is a rotor available for nearly every application to solve your swinging buckets and fixed angle needs



Swinging buckets

Find your consumable [➤](#)

View rotor details [➤](#)



Fixed angle

Find your consumable [➤](#)

View rotor details [➤](#)

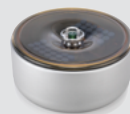
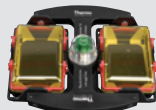
Swinging buckets rotors



Thermo Scientific Rotor Name		TX-1000	TX-750	BIOShield 1000A	TX-400	BIOShield 720
Maximum Capacity (mL)		4 x 1000 mL	4 x 750 mL 3.12.1.2	4 x 250 mL	4 x 400 mL	4 x 180 mL
Maximum Speed (rpm¹)		4200 rpm	4700 rpm 3.12.1.4	6000 rpm	5000 rpm	6300 rpm
Maximum RCF (x g¹)		4122 x g	4816 x g 3.12.1.3	7164 x g	4696 x g	7188 x g
Biocontainment 🏠		✓ (Optional) 3.12.1.5 a	✓ (Optional)	✓ (Integrated)	✓ (Optional)	✓ (Integrated)
Multifuge X4 Pro/X4F Pro		✓	✓	✓		
Megafuge ST4 Plus/ST4F Plus		✓	✓	✓		
Multifuge X1 Pro					✓	✓
Megafuge ST1 Plus					✓	✓
Maximum Capacity	1000 mL Bio-Bottle	4	–	–	–	–
	750 mL Bio-Bottle	4	4	–	–	–
	500 mL Nalgene™ Bottle	4	–	–	–	–
	500 mL Corning™ Bottle	4	4	–	–	–
	250 mL Nalgene Bottle	8	4	4	4	–
	250 mL Corning Bottle	4	4	–	–	–
	225 mL - 175 mL Conical Bottle	8	4	–	4	–
	50 mL Conical Tube	40	3.12.1.5 b 28	16	16	8
	50 mL Skirted Conical Tube	20	20	16	–	–
	50 mL Nalgene Oak Ridge Tube	48	28	–	16	–
	30 mL Sterilin™ Universal Tube	28	28	16	12	16
	15 mL Conical Tube	96	3.12.1.5 c 56	36	36	24
	10 mL Blood Collection Tube (16 x 100 mm)	148	3.12.1.5.f 84	64	56	48
	5/7 mL Blood Collection Tube (13 x 75-100 mm)	196	3.12.1.5.e 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	3.12.1.5 d 16	–	–	–

¹Maximum speed based on top performance models.
🏠Biocontainment certification by Public Health England, Porton Down, UK.
Labware not shown to scale.

Swinging buckets rotors



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)		5500 rpm	6300 rpm	3600 rpm	4000 rpm	4700 rpm	6100 rpm
Maximum RCF (x g ¹)		5580 x g	6168 x g	2738 x g	2272 x g	4297 x g	7197 x g
Biocontainment		✓ (Optional)	✓ (Integrated)		✓ (Optional)	✓	✓
Multifuge X4 Pro/X4F Pro			✓	✓	✓		✓
Megafuge ST4 Plus/ST4F Plus					✓		
Multifuge X1 Pro		✓			✓	✓	
Megafuge ST1 Plus		✓			✓	✓	
Maximum Capacity	1000 mL Bio-Bottle	–	–	–	–	–	–
	750 mL Bio-Bottle	–	–	–	–	–	–
	500 mL Nalgene™ Bottle	–	–	–	–	–	–
	500 mL Corning™ Bottle	–	–	–	–	–	–
	250 mL Nalgene Bottle	–	–	–	–	–	–
	250 mL Corning Bottle	–	–	–	–	–	–
	225 mL - 175 mL Conical Bottle	–	–	–	–	–	–
	50 mL Conical Tube	4	–	–	–	16	16
	50 mL Skirted Conical Tube	4	–	–	–	–	–
	50 mL Nalgene Oak Ridge Tube	–	–	–	–	–	–
	30 mL Sterilin™ 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

¹Maximum speed based on top performance models.
 Biocontainment certification by Public Health England, Porton Down, UK.
 Labware not shown to scale.



Rotors and adapters for swinging buckets rotors



TX-1000 Swinging Bucket Rotor¹, 90°, R_{max} 209 mm

Centrifuge	Maximum Speed (rpm)	Maximum RCF (x g)
Multifuge X4R Pro/X4RF Pro	4200	4122
Multifuge X4 Pro/X4F Pro	3800	3374
Megafuge ST4R/ST4RF Plus	4200	4122
Megafuge ST4/ST4F Plus	3800	3374
Multifuge X1 Pro	n/a	n/a
Megafuge ST1 Plus	n/a	n/a

Cat. No.	Adapter Image	Description	Rotor Capacity (places x volume, mL)	Maximum Tube Dimensions (Ø x L, mm)
Rotor and Accessories				
75003017		TX-1000 Rotor Cross	4 x 1,000 mL or 24 microplate	
75003001		TX-1000 Buckets (Set of 4)		
75007309		TX-1000 ClickSeal Biocontainment Lids (Set of 4) ♦		
75007001		Replacement O-rings		
75007300		1000 mL Bio-Bottle - Polypropylene (Set of 4)		
Adapters for TX-1000 Rotor (Sets of 4)				
75007301	1	1000 mL Bio-Bottle	4 x 1,000 mL	126 x 140
75007304	2	750 mL Polypropylene Bio-Bottle and any TX-750 Round adapter	4 x 750 mL	98 x 133
75004253	3	500 mL Nalgene Bottle	4 x 500 mL	70 x 160
75007302	4	500 mL Corning Bottle	4 x 500 mL	98 x 133
75005392	5	250 mL Corning Conical Bottle or 200 mL Nunc™ Bottle or 175 mL Nalgene Conical Bottle	4 x 250 mL	62 x 145
75007305	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
75003674	7	50 mL Conical Tube	40 x 50 mL	30 x 120
75004255	8	50 mL Double Biocontainment Vessel for 50 mL Conical Tube (can be combined with ClickSeal lids)	20 x 50 mL	30 x 120
75004252	9	50 mL Nalgene Oak Ridge Tube	48 x 50 mL	29.5 x 120
75007306	10	15 mL Conical Tube	96 x 15 mL	17.5 x 121
75003672	11	10 mL Blood Collection Tube (16 x 100 mm) or Corex™/Kimble™ Tubes	148 x 10 mL	17 x 110
75003697	12	9/10 mL Blood Collection Tube (Sarstedt™)	100 x 9/10 mL	17 x 110
75003671	13	5/7 mL Blood Collection Tube (13 x 75-100 mm)	196 x 5/7 mL	14 x 110
75003709	14	4.5/6 mL Blood Collection Tube (Greiner™)	164 x 4.5/6 mL	14 x 110
75007303	15	Microplate Carriers	4 x 6 Standard or 4 x 2 Deep-Well	Height < 88 mm
75003829	16	Small Bag/Cell Culture Bags 4 x 2 Bags (< 350 mL)	4 x 2 Bags	

Adapters



more

¹Rotor, buckets and lids sold separately.
♦ Biocontainment certification by Public Health England, Porton Down, UK.



Rotors and adapters for swinging buckets rotors



TX-750 Swinging Bucket Rotor¹, 90°, R_{max} 195 mm

Centrifuge	Maximum Speed (rpm)	Maximum RCF (x g)
Multifuge X4 Pro/X4F Pro	4700	4816
Megafuge ST4/ST4F Plus	4700	4816
Multifuge X1 Pro	n/a	n/a
Megafuge ST1 Plus	n/a	n/a

Cat. No.	Adapter Image	Description	Rotor Capacity (places x volume, mL)	Maximum Tube Dimensions (Ø x L, mm)
Rotor and Accessories				
75003180		TX-750 Rotor Cross		
75003608		TX-750 Round Buckets (Set of 4)	4 x 750 mL	
75003609		TX-750 Round ClickSeal Biocontainment Lids (Set of 4) ♦		
75003610		Replacement TX-750 Round O-rings for lids (Set of 4)		
75003699		750 mL Bio-Bottle - Polypropylene (Set of 12)		
75003795	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
75003617	1	Microplate Carriers and T-75 Flask (includes tray and pads) (Set of 4)		
Adapters for TX-750 Rotor (Sets of 4, unless stated otherwise)				
Direct		750 mL Bio-Bottle	4 x 750 mL	98 x 133
Direct		500 mL Corning Conical Bottle	4 x 500 mL	98 x 133
75003792	2	250 mL Corning Conical Bottle (unsealed buckets only)	4 x 250 mL	62.5 x 139
75003710	3	250 mL Nalgene Bottle	4 x 250 mL	62.5 x 139
75003710	3	225 mL/175 mL BD Falcon Conical Bottle (requires BD #352090) (Open buckets only)	4 x 225 mL	62.5 x 139
75003710	3	200 mL Nunc Conical Bottle (requires Nunc #377585) (Open buckets only)	4 x 200 mL	62.5 x 139
75003710	3	175 mL Nalgene Conical Bottle (requires Nalgene #DS3126-0175) (Open buckets only)	4 x 175 mL	62.5 x 139
75003713	4	100 mL Round Bottom Open-Top Tube	8 x 100 mL	45 x 123
75003638	5	50 mL Conical Tube	28 x 50 mL	30 x 120
75003824	6	50 mL Conical or Skirted Tube	20 x 50 mL	30 x 120
75003715	7	50 mL Nalgene Oak Ridge Tube	28 x 50 mL	29.5 x 120
75003716	8	30 mL Sterilin Universal Tube	28 x 30 mL	25.5 x 120
75003639	9	15 mL Conical Tube	56 x 15 mL	17 x 122
75003719	10	15 mL Blood Collection Tube (17 x 125 mm) (inner circle only)	32 x 15 mL	17 x 134
75003719	11	10 mL Blood Collection (16 x 100 mm) or 15 mL Corex/Kimble Tube	84 x 10/15 mL	17 x 117
75003718	11	14 mL Round or Conical Urine Tube	48 x 14 mL	18 x 124
75003723	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
75003724	13	5 mL RIA or Round Bottom Tube (with out cap)	148 x 5 mL	13 x 111
75003732	14	5/7 mL Round Bottom Tube (without cap) with Decanting Aid	148 x 5/7 mL	13 x 111
75003733	14	1.5/2 mL Microtube	192 x 2 mL	11 x 50
75008383	15	T-75 Nunc Easy Flask (Set of 2)	4 x T-75	—
75008384	16	T-25 Nunc Easy Flask (Set of 2)	8 x T-25	—

Adapters

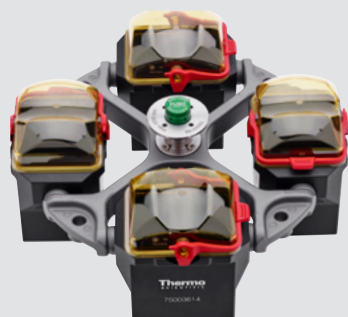


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¹Rotor, buckets and lids sold separately.
♦ Biocontainment certification by Public Health England, Porton Down, UK.



Rotors and adapters for swinging buckets rotors



TX-750 Swinging Bucket Rotor, 90°, R_{max} 195 mm

Centrifuge	Maximum Speed (rpm)	Maximum RCF (x g)
Multifuge X4R Pro/X4RF Pro, Megafuge ST4R/ST4RF Plus, 230V	4700	4816
Multifuge X4 Pro/X4F Pro, Megafuge ST4/ST4F Plus, 230V	4500	4415
Multifuge X4 Pro/X4F Pro Series, Megafuge ST4/ST4F Plus Series, 120V	4300	4031
Multifuge X1 Pro, Megafuge ST1 Plus	n/a	n/a

Cat. No.	Adapter Image	Description	Rotor Capacity (places x volume, mL)	Maximum Tube Dimensions (Ø x L, mm)
Rotor and Accessories				
75003180		TX-750 Rotor Cross		
75003614		TX-750 Rectangular Buckets (Set of 4)	4 x 250 mL	
75003615		TX-750 Rectangular Click Seal Biocontainment Lids (Set of 4) ♦		
75003616		Replacement TX-750 Rectangular O-rings for lids (Set of 4)		
Adapters for TX-750 Rotor (Sets of 4)				
75003737	1	250 mL Flat Bottom Bottle	4 x 250 mL	63 x 130
75003738	2	150 mL Round Bottom Open-Top Tube	4 x 150 mL	56 x 124
75003742	3	100 mL Round Bottom Open-Top Tube	4 x 100 mL	46 x 124
75003685	4	50 mL Conical Tube	20 x 50 mL	30 x 121
75003749	5	50 mL Round Bottom Tube	12 x 50 mL	35 x 121
75003750	6	45 mL Flat/Round Tube	16 x 45 mL	30 x 121
75003755	7	30 mL Sterilin Universal Tube	16 x 30 mL	26 x 121
75003756	8	25 mL DIN Round Bottom Tube	24 x 25 mL	26 x 121
75003684	9	15 mL Conical Tube	48 x 15 mL	17 x 120
75003758	10	14 mL Flanged Round Bottom Tube	36 x 14 mL	18 x 121
75003759	11	14 mL Round or Conical Urine Tube	36 x 15 mL	17 x 124
75003767	12	10 mL Blood Collection (16 x 100 mm) or 15 mL DIN Tube	64 x 10/15 mL	17 x 118
75003768	13	5/7 mL or 4.5/6 mL Blood Collection Tube	80 x 5/7 mL	14 x 118
75003769	14	5/7 mL Round Bottom Tube (13 x 75-100 mm)	112 x 5/7 mL	13 x 119
75003770	15	1.5/2 mL Microtube	224 x 2 mL	11 x 50

Adapters



more

♦ Biocontainment certification by Public Health England, Porton Down, UK.



Rotors and adapters for swinging buckets rotors



BIOShield 1000A Swinging Bucket Rotor, 90°, R_{max} 178 mm

Centrifuge	Maximum Speed (rpm)	Maximum RCF (x g)
Multifuge X4 Pro/X4F Pro	6000	7164
Megafuge ST4/ST4F Plus	5300	5590
Multifuge X1 Pro	n/a	n/a
Megafuge ST1 Plus	n/a	n/a

Cat. No.	Adapter Image	Description	Rotor Capacity (places x volume, mL)	Maximum Tube Dimensions (Ø x L, mm)
Rotor and Accessories				
75003182		BIOShield 1000A ♦	4 x 250 mL	
Adapters for BIOShield 1000A Rotor (Sets of 4)				
75003737	1	250 mL Flat Bottom Bottle	4 x 250 mL	63 x 130
75003738	2	150 mL Round Bottom Open-Top Tube	4 x 150 mL	56 x 124
75003742	3	100 mL Round Bottom Open-Top Tube	4 x 100 mL	46 x 124
75003749	4	50 mL Round Bottom Tube	12 x 50 mL	35 x 121
75003750	5	45 mL Flat/Round Tube	16 x 45 mL	30 x 121
75003755	6	30 mL Sterilin Universal Tube	16 x 30 mL	30 x 121
75003756	7	25 mL DIN Round Bottom Tube	24 x 25 mL	26 x 121
75003758	8	14 mL Flanged Round Bottom Tube	36 x 14 mL	18 x 121
75003759	9	14 mL Round or Conical Urine Tube	36 x 15 mL	17 x 124
75003767	10	10 mL Blood Collection (16 x 100 mm) or 15 mL DIN Tube	64 x 10/15 mL	17 x 118
75003768	11	5/7 mL or 4.5/6 mL Blood Collection Tube	80 x 5/7 mL	14 x 118
75003769	12	5/7 mL Round Bottom Tube (13 x 75-100 mm)	112 x 5/7 mL	13 x 119
75003770	13	1.5/2 mL Microtube	224 x 2 mL	11 x 50
75003643	14	50 mL Conical Tube	16 x 50 mL	30 x 121
75003642	15	15 mL Conical Tube	36 x 15 mL	17 x 120

Adapters

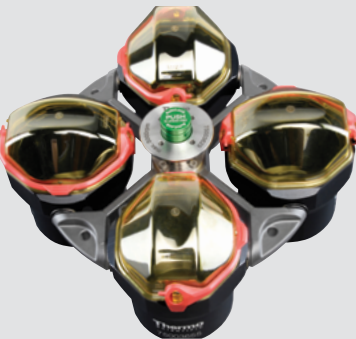


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♦ Biocontainment certification by Public Health England, Porton Down, UK.



Rotors and adapters for swinging buckets rotors



TX-400 Swinging Bucket Rotor¹, 90°, R_{max} 168 mm

Centrifuge	Maximum Speed (rpm)	Maximum RCF (x g)
Multifuge X4 Pro/X4F Pro	n/a	n/a
Megafuge ST4/ST4F Plus	n/a	n/a
Multifuge X1 Pro	5000	4696
Megafuge ST1 Plus	5000	4696

Cat. No.	Adapter Image	Description	Rotor Capacity (places x volume, mL)	Maximum Tube Dimensions (Ø x L, mm)
Rotor and Accessories				
75003181		TX-400 Rotor Cross		
75003655		TX-400 Round Buckets (Set of 4)	4 x 400 mL	
75003656		TX-400 Round ClickSeal Biocontainment Lids (Set of 4) ♦		
75003657		Replacement TX-400 O-rings for lids (Set of 4)		
75007585		400 mL Bio-Bottle - Polypropylene (Set of 12)		
Adapters for TX-400 Rotor (Sets of 4)				
Direct		400 mL Bio-Bottle	4 x 400 mL	80 x 125
75003788	1	250 mL Thermo Scientific Nalgene™ Bottle	4 x 250 mL	62 x 135
75003788	1	200 mL Thermo Scientific Nunc Conical Bottle (requires Nunc #377585)	4 x 200 mL	62 x 125
75003788	1	225 mL/175 mL BD Falcon Conical Bottle (requires BD #352090)	4 x 175 mL	62 x 125
75003708	2	100 mL Round Bottom Open-Top Tube	4 x 100 mL	45 x 117
75003707	3	50 mL DIN Round Bottom Tube	12 x 50 mL	34.5 x 105
75003799	4	50 mL Nalgene™ Oak Ridge Tube	16 x 50 mL	29.5 x 114
75003683	5	50 mL Conical Tube	16 x 50 mL	30 x 116
75003703	6	30/25 mL DIN Round/Flat Bottom Tube	20 x 30 mL	25.5 x 108
75003706	7	30 mL Sterilin Universal Tube	12 x 30 mL	25 x 110
75003682	8	15 mL Conical Tube	36 x 15 mL	17 x 121
75003794	9	15 mL Blood Collection Tube (17 x 125 mm)	16 x 15 mL	17 x 131
75003704	10	15 mL Round Bottom Tube (Sarstedt)	40 x 15 mL	17 x 105
75003798	11	14 mL Round or Conical UrineTube	28 x 14 mL	17 x 112
75003681	12	10 mL Blood Collection (16 x 100 mm)	56 x 10/15 mL	16 x 113
75003680	13	5/7 mL Blood Collection Tube (13 x 75-100 mm)	76 x 5/7 mL	13 x 110
75003825	14	4.5/6 mL Blood Collection Tube (Greiner)	64 x 4.5/6 mL	13 x 110
75003793	15	3 mL RIA or Round Bottom Tube (without cap)	76 x 3/5 mL	11 x 110
75003700	16	1.5/2 mL Microtube	136 x 2 mL	11 x 45

Adapters



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¹Rotor, buckets and lids sold separately.
♦ Biocontainment certification by Public Health England, Porton Down, UK.