

# Thermo Scientific Heraeus Multifuge X1 and Multifuge X3 Centrifuge Series

Market-leading throughput, versatility and efficiency for high-performance processing



## Global Leader in Quality and Reliability

For more than 100 years, Thermo Scientific centrifuges have delivered outstanding performance and reliability in the lab. From basic benchtop instruments to advanced floor models, we take pride in manufacturing centrifuges that offer exceptional quality for consistent results year after year.

# Thermo Scientific Heraeus Multifuge X1 and Multifuge X3 Centrifuge Series



Secure, push-button **Auto-Lock**® rotor exchange for application versatility



One-handed, certified sample protection with **ClickSeal®** biocontainment rotor lids



High performance and increased capacity with our lightweight **Fiberlite**® **carbon fiber rotors** 

Our Heraeus® Multifuge® X1 and Multifuge X3 centrifuge series are ideal for a wide range of processing needs including:



Cell Culture Bioproduction Food Safety **Blood Separation Body Fluids Processing** Hematology DNA/RNA Harvesting Pharmaceutical Biotechnology Stem Cell Microbiology Molecular Biology **Proteomics** Genomics Clinical Chemistry TB Sputum

## **Bring superspeed applications to your benchtop**



### **Heraeus Multifuge X1**

- Compact 1.6-liter with exceptional design technologies for ultimate efficiency
- Average capacity of a standard 3 liter in 40% less bench space
- Serving a variety of processing needs, unique carbon fiber rotors enhance performance and versatility



### **Heraeus Multifuge X3**

- Market-leading centrifuge trusted by top scientists around the globe
- Unrivalled performance and nearly twice the capacity for common tubes as the industry average in the same footprint
- Unequalled RCF performances on the bench with exclusive carbon fiber rotor technology

### **Exceptional Throughput**

Accelerate research with unmatched capacity

- Up to 76 x 5/7 ml blood tubes or up to 16 x 50 ml conical tubes in our standard 4 x 400 ml swing-out rotor
- 32 x 5/7 ml tube capacity with convenient 4 x 200 ml swing-out rotor, providing quicker processing with acceleration of 0-3000rpm in just 10 seconds
- 6 x 100 ml tubes at 24700 xg with the Fiberlite F15-6x100y, as well as 50 ml conical tubes with adapters.
- Up to 40 x 50 ml conical tubes in swing-out configuration, with biocontainment option increasing experiment size up to 40%
- Up to 14 x 50 ml conical tubes in fixed angle rotor at over 17000 xg for 133% more capacity than traditional 6 place rotors
- High capacities up to 6 x 250 ml (1500 ml) with the Fiberlite F14-6x250 LE rotor

## **Unmatched Versatility**

Industry's broadest range of rotors and adapters available, for your current and future applications including biocertified Thermo Scientific Fiberlite rotors

- 4 swing-out configurations, accommodating microtubes to 400 ml bottles to microplates, all available with biocontainment sealing options
- 9 fixed angle rotors, including our exclusive rotor with optional vessels for safe handling and processing of the most hazardous or sensitive samples
- 9 swing-out configurations, handling up to 750 ml bottles and up to 28 microplates
- 7 fixed angle rotors, featuring corrosion-resistant carbon fiber rotors with unmatched capacity and performance up to 25000 xg

## **Unsurpassed Performance**

Technological leadership providing high performance levels

- The only 1-liter centrifuge capable of spinning 14 x 50 ml conical tubes in angle configuration at over 12000 xg
- Achieve over 25800 xg on 30 x 1.5 and 2.0 ml microtubes and capacity up to 48 microtubes with the Fiberlite F21-48x2.0 rotor
- Superior acceleration and deceleration rates further reduce run time
- Run deepwell and filter plates at over 6000 xg
- Fiberlite F14-6x250 LE rotor for processing 250 ml bottles at RCF over 18500 xg
- Capability to run 50 ml conical tubes and 94 ml tubes at over 24590 xg

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# Breakthrough Technology for Ultimate Performance

The 4 x 400 ml Heraeus Multifuge X1 and 4 x 750 ml Heraeus Multifuge X3 centrifuges are available in both ventilated and refrigerated units. Ideal for temperature-sensitive protocols, the powerful refrigeration systems allow control of sample and chamber temperature between -10  $^{\circ}$ C and +40  $^{\circ}$ C.

#### BREAKTHROUGH

Auto-Lock | Fiberlite | SMARTSpin | ClickSeal | Hybrid Lid Latch



## Innovative Thermo Scientific Solutions

#### Auto-Lock® III Rotor System

Safe and secure locking system delivers:

- Push-button installation and exchange of rotors for quick switch between applications
- Easy rotor removal provides clear chamber access in seconds, enabling quick and efficient cleaning, reducing contamination risk and leading to improved research and a healthier working environment

#### Fiberlite® Carbon Fiber Rotors

Maximize centrifuge performance with corrosion-resistant Fiberlite rotors providing increased capacity, faster speeds and higher g-force (up to 25,000 xg), allowing super speed applications to be processed on the bench

#### SMARTSpin® Technology

Dynamic technology improves safety and run results by optimizing a variety of parameters for each rotor and bucket combination and selected speed:

- Auto-corrects maximum rotor speed and adapts the imbalance sensibility to the load, detecting abnormal vibrations, such as those caused by tube breakages or leaks
- Continually measures rotor vibration allowing actual imbalance to be compared to standard rotor type profiles and eliminating over- or under-sensitivity than can occur with traditional switch imbalance devices
- Optimizes motor power during acceleration and braking, resulting in reproducible runs, as well as rotor speed during pre-cooling/ pre-warming programs for super short set-ups

#### ClickSeal® Bucket Sealing System

Innovative biocontainment solution provides:

- Simple operation for all laboratory users, eliminating screw caps and complicated clips
- Glove-friendly, one-handed open/close capability, ergonomically designed for both right and left-handed operation
- Biocontainment certification by HPA, Porton Down, UK (formerly CAMR)
- Transparent and biocompatible
   polyetherimide (PEI) sealing covers have
   broad chemical resistance, excellent thermal
   properties and exceptional strength for
   durability

AFB WANTERDARY



#### **Hybrid Lid Latch**

- Improve closure time and reduce wear with our highly reliable, motorized lid latch system – combining the advantages of mechanical and electromechanical systems
- One finger downward motion for easiest closing and locking even on tall benches
- Optional automatic lid opening at end of run for rapid retrieval of samples during routine operation
- Password protection option for sample security, preventing unwanted removal of samples in multi-user or high security environments

#### **Compact, Comfortable Design**

- Exceptional capability in compact dimensions maximizes workspace
- Low profile (only 31 cm/ 12.4 in deck height) and curved design ensure comfortable loading and unloading of samples and cleaning of the unit



# Advanced Technology for Resource Efficiency

- Less energy is consumed per tube –
  up to 40% fewer watts per tube than
  competing models since larger
  capacity reduces number of runs
  required for a given batch of samples
- 15% energy savings compared with standard stand-by power consumption with unique "powersave" feature, enabled by default, that turns off display when not in use
- Reduce capital investment and eliminate unnecessary equipment disposal issues with longer lifetime of Fiberlite rotors – guaranteed 15 years
- Compliance with RoHS (Restriction of Hazardous Substances Directive) and WEE (Waste Electrical and Electronic Equipment Directive)

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Our Heraeus Multifuge X1 and Multifuge X3 general purpose centrifuges feature an enhanced interface designed for maximum protocol versatility, complementing the numerous rotor configurations available.

Programmable, detailed operation controls and real-time information are perfect for research and multi-user environments. Exclusive technologies maximize run performance, guarantee reproducibility and deliver superior temperature accuracy for improved sample protection.

#### **Dedicated Program Keys**

Immediate storage and access to the most frequently used programs and to the 99 programs library, supporting high-throughput laboratories

#### **Accessible Programming**

Easily adjust speed, time and temperature, even during the run



**Program Keys:** 5 direct access and folder with storage up to 99

programs including labelling area

**Acc/Dec:** Choice of 9 acceleration and 10 deceleration rates

**Speed Control:** Immediate toggle between RCF and speed control, up to 25830 xg or 15200 rpm

**Bucket:** Quickly adjust rotor parameters for optimal RCF calculation and temperature management

Time

Set time in hrs:min, min:sec or continuous mode.

**Dual Timing Mode** 

At-Start Standard timing down from pushing "Start" button
Used for routine, non-critical runs when reproducibility not required.

At-Speed For ultimate replication of result

Timing begins at operating speed for specific run time required.

No variation due to changes in acceleration time to operating speed.

Ideal for filtration devices requiring specific times at speed.

#### **Dataport Option**

To transport data to a PC, a dataport kit is available (cat. no. 50124205 for Heraeus Multifuge X1 and 20190345 for Heraeus Multifuge X3)



#### **Superior Security**

Optional password protection, ideal for multi-user environments

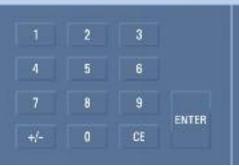
- For programs: prevents accidental adjustments or removal
- To open lid: ensures samples are only removed from the temperaturecontrolled chamber by the researcher who has set the password

#### **Easy to Read and Use**

- Highly visible backlit display for clear reading of running parameters across the lab
- Display of SET and ACTUAL parameters
- Multilingual instructions, including English, German, French, Spanish, Russian, Italian and Dutch, on programming, run conditions, alerts and service messages
- · Glove- and detergent-friendly panel
- Convenient keyboard for direct input without scrolling – of program parameters, reducing preparation time









#### **Temperature**

Temp: Control temperatures between -10°C and +40°C Pre-Temp (refrigerated versions): Achieve 4°C in 15 minutes from ambient 23°C\*

Pulse: Ideal for short runs Open: Motorized latch with optional automatic operation

#### **Dual Temperature Mode**

#### Air/Chamber Temperature

For most of the temperature-tolerant protocols. For efficient and stable precooling of the chamber and rotor, prior to temperature-sensitive runs.

#### **Sample Temperature**

For accurate control of the sample temperature before and during, the run, independently from the rotor, the speed and the environmental conditions. Corrects for natural temperature gradients with the chamber/rotor.

# Save Valuable Lab Space

The Heraeus Multifuge X3 centrifuge series is available in floor-standing configuration to conserve valuable bench space and, with a smaller footprint than a rolling cart, saves additional lab space.

The Heraeus Multifuge X3F centrifuges feature movable, locking casters with the same performance and capacity as our benchtop models. Easily transported, positioned and safely locked for enhanced flexibility. Ergonomic operation at a working height of 79 cm/31.1, ideal for loading and unloading rotors, reducing both overreaching and lifting effort.

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## Incredible Capacity and Productivity

Our Heraeus Multifuge X1 and Multifuge X3 centrifuge series feature a wide range of rotors to meet your general purpose processing requirements.

#### **Swinging Bucket Rotors**



#### TX-200

#### **High Speed Productivity**

Serving primary swing-out processing needs, with a capacity of 32 blood tubes or 4 conical tubes per run in sealed conditions, achieve an impressive mix of speed and accelerating/braking power.



#### TX-400

#### **Maximum Flexibility**

Designed for a broad range of laboratory throughput needs, with a capacity of 76 blood tubes and up to 16 conical tubes in a single run, for the highest configuration flexibility on the market.



#### TX-750

#### **Outstanding Versatility**

Delivers maximum flexibility at 4700 rpm and features a choice of round or rectangular buckets with multiple adapters as well as microplate carriers.



#### **BIOLiner®**

#### **Exceptional capacity**

Significantly improves productivity – process over 100% more 50 ml conical tubes or 100% more blood tubes with biocontainment sealing per run than with competitive models. Certified sealed microplate carriers expand application options.



#### HIGHPlate® 6000

#### **Filtration Quality**

For filter plate users, ideal for DNA purification protocols, delivering more than 6000 x g and meeting the needs of several filtration devices.



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#### **Compact Processing**

Centrifuges up to 6 microplates in optional certified sealed conditions with transportable carriers and the versatility of Auto-Lock rotor installation.



#### Fiberlite H3-LV

#### **Unmatched Microplate Capacity and Flexibility**

Perfect for pelleting cells and cellular debris, protein precipitation, plasmid purification and collecting physiological fluids for diagnostic tests. In addition, achieve high-volume microplate processing with a capacity of 8 deepwell blocks or 28 microplates.



#### BIOShield® 720 and BIOShield 1000A

#### **Excellent Performance**

Runs frequently used tubes above 7000 xg with the confidence and simplicity of a single, certified biosafety lid.



# **Unmatched Capacity and Speed**

#### Heraeus Multifuge X1 and Multifuge X3 centrifuge rotors, continued

# **Fixed Angle Rotors** Fiberlite F14-6x250 LE Ideal for pelleting bacteria or yeast cells at above 18500 xg and for purifying nucleic acids and cells. Fiberlite F15-6x100y Durable design for general purpose pelleting of organelles, density gradients and various protocols requiring angle centrifugation of disposable conical tubes up to 24700 xg. Fiberlite F13-14x50cy Ideal for pelleting prokaryotic and eukaryotic cells from cell cultures and with our generous 14-place capacity and high maximum RCF (12300-17100 xg), features more than double the throughput of an industry standard angle rotor. Fiberlite F15-8x50cy Achieving more than 24000 xg, pellet cells, bacteria, subcellular fractions and small amounts of nucleic acids and viruses in disposable conical tubes. **CLINIConic®** Spin 30 x 15 ml round or conical tubes and ensure acceleration and throughput for cell culture and blood separation applications. 8 x 50 Sealed Ideal for TB sputum applications, centrifuge 8 conical tubes in individually sealed vessels, which can be prepared remotely, with rapid acceleration and processing times. HIGHConic® II Process 6 x 94 ml tubes between 10000 and 15000 xg in certified sealed conditions. **Micro-Volume Rotors** Perfect blend of capabilities to support micro-volume protocols, such as nucleic acid or protein lysate preparation and PCR reaction set-up. With Auto-Lock rotor exchange, transform your general purpose

Microliter 30 x 2

Microliter 48 x 2

unit into a powerful microcentrifuge in less than 3 seconds!

Fiberlite F21-48x2.0

<sup>&</sup>lt;sup>1</sup> Performance with 230 V centrifuge models.

Biocontainment certified by CAMR, HPA, Porton Down, UK.





## Thermo Scientific Fiberlite Rotors

### Superspeed performance on the benchtop

Fiberlite carbon fiber rotors maximize the performance of Heraeus Multifuge general purpose centrifuges with increased capacity, faster speeds and higher g-force (up to 25,000 xg), now within your reach.

#### Unequalled durability and cleaning convenience

• Corrosion- and fatigue-resistance eliminates serious safety hazards caused by exposure to moisture and everyday laboratory chemicals.

#### **Superior insulation**

 Naturally insulating properties ensure samples are kept at a constant temperature during centrifugation

#### Improved ergonomics and productivity

• Lightweight design provides faster acceleration/deceleration rates for shorter run times, as well as a safer work environment

#### **Certified safe sample containment**

- In case of tube or bottle failure, fluids are contained in a special curved annulus at the top of rotors with Enhanced Liquid Containment (ELC).
- Enhanced containment of biohazardous samples is achieved with rotors featuring Bioseal technology, certified by HPA, Porton Down, UK (formerly CAMR).

#### Complete workflow in disposable conical tubes

- Supports complete workflow in single disposable conical tube for cost efficiencies and waste reduction
  - Protect from contamination risk, eliminate sample transfers and non-productive tasks, such as autoclaving
  - >> Reduce processing times by spinning at maximum speeds up to 24,500 xg without risk of tube damage
- Enhanced support for conical tubes, enabling many popular tubes to be spun above their rated RCF<sup>2</sup>
- Process 15 ml conicals with available adapters for flexibility

#### **Exceptional value**

 A secure investment, backed by a 15-year warranty ensures dependable results over an extended lifetime

2: Please contact your sales representative for details of recommended tube suppliers.

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The	Thermo Scientific Rotors and Adapters							Heraeus Multifuge X3/X3R	
	Cat. No		Description	Rotor Capacity (Places x Volume)	Max Tube Dimensions (Ø x L, mm)	Max Speed (rpm)	Max RCF (xg)	Max Speed (rpm)	Max RCF (xg)
	75003658		TX-200 Swinging Bucket Rotor*						
	75003659		Round Buckets (set of 4), 90°, R <sub>max</sub> 165 mm	4 x 180 ml		5500 5250 <sup>2</sup>	<b>5580 5084</b> <sup>2</sup>	n/a	n/a
*	75003660		ClickSeal Biocontainment Lids for Round Buckets (se	t of 4)					
	75003687		Replacement O-rings for Lids (set of 4)						
			Adapters for Round Buckets (sets of 4)						
	No adapter needed		180 ml Polypropylene Screw Cap Bottle (75003800, pkg	of 12) 4 x 180 ml	56.5 x 123				
	75003801	2	100 ml Round Bottom Open-Top Tube	4 x 100 ml	48 x 122				
	75003802	3	50 ml DIN Round Bottom Tube	4 x 50 ml	35 x 126				
	75003815	4	50 ml Round Bottom Tube	4 x 50 ml	32 x 126				
	75003803	5	50 ml Conical or Skirted Tube	4 x 50 ml	29.5 x 126				
	75003804	6	25 ml Universal Tube	4 x 25 ml	25.5 x 118				
	75003805	7	25 ml DIN Round/Flat Bottom Tube	8 x 25 ml	25 x 118				
	75003806	8	20 ml Round Bottom Tube	12 x 25 ml	22 x 125				
	75003771	9	15 ml Conical Tube	20 x 20 ml	17 x 121				
	75003809	10	15 ml Blood Collection Tube	16 x 15 ml	17 x 121				
	75003807	1	14 ml Conical Urine Tube	8 x 14 ml	17 x 114				
	75003808	12	10 ml Blood Collection or 15 ml Corex®/Kimble® Tube	28 x 10/15 ml	17 x 121				
	75003785	13	5/7 ml or 4.5/6 ml Blood Collection Tube	32 x 5/7 ml	13 x 122				
	75003810	14	5/7 ml Round Bottom Open-Top Tube	36 x 5/7 ml	13 x 118				
	75003811	<b>1</b>	3/5 ml RIA or Round Bottom Tube (without cap)	48 x 3/5 ml	12 x 124				
	75003812	16	1.5/2 ml Conical Microtube	48 x 2 ml	11 x 45				

<sup>&</sup>lt;sup>1</sup> Buckets and lids sold separately



<sup>&</sup>lt;sup>2</sup> 120 V ventilated centrifuge



	Thermo Scientific Rotors and Adapters						Heraeus Multifuge X1/X1R		lultifuge 3R
	Cat. No		Description	Rotor Capacity (Places x Volume)	Max Tube Dimensions (Ø x L, mm)	Max Speed (rpm)	Max RCF (xg)	Max Speed (rpm)	Max RCF (xg)
	75003629		TX-400 Swinging Bucket Rotor						
	75003655		Round Buckets (set of 4), 90°, R <sub>max</sub> 168 mm	4 x 400 ml		5000	4696	n/a	n/a
*	75003656		ClickSeal Biocontainment Lids for Round Buckets (set of 4	<b>!</b> )					
	75003657		Replacement O-rings for Lids (set of 4)						
			Adapters for Round Buckets (sets of 4)						
	No adapter needed		400 ml Polypropylene Bio-Bottle (75007585, pkg of 12)	4 x 400 ml	80 x 125				
	75003788	18	250 ml Thermo Scientific Nalgene Oak Ridge Bottle	4 x 250 ml	62 x 135				
	75003788	18	200 ml Thermo Scientific Nunc Conical Bottle + Nunc no. 3775	85 4 x 200 ml	62 x 125				
	75003788	18	225 ml and 175 ml BD Falcon™ Conical Bottle + BD no. 352090	4 x 175 ml	62 x 125				
	75003708	19	100 ml Round Bottom Open-Top Tube	4 x 100 ml	45 x 117				
	75003707	20	50 ml DIN Round Bottom Tube	12 x 50 ml	34.5 x 105				
	75003799	21	50 ml Round Bottom Tube	16 x 50 ml	28.5 x 114				
	75003683	22	50 ml Conical Tube	16 x 50 ml	29.5 x 116				
	75003703	23	30/25 ml DIN Round/Flat Bottom Tube	20 x 30 ml	25.5 x 108				
	75003706	24	25 ml Universal Tube	12 x 20 ml	25 x 110				
	75003682	25	15 ml Conical Tube	36 x 15 ml	17 x 121				
	75003794	26	15 ml Blood Collection Tube (17 x 125 mm)	16 x 15 ml	15.5 x 131				
	75003704	27	15 ml Round Bottom Tube (Sarstedt®)	40 x 15 ml	17 x 105				
	75003798	28	14 ml Conical Urine Tube	28 x 14 ml	17 x 112				
	75003681	29	10 ml Blood Collection or 15 ml Corex/Kimble Tube	56 x 10/15 ml	17 x 113				
	75003680	30	5/7 ml Blood Collection Tube (Vacutainer®)	76 x 5/7 ml	13 x 110				
	75003825		4.5/6 ml Blood Collection Tube (Greiner®)	64 x 4.5/6 ml	13 x 110				
	75003793	31	3 ml RIA or Round Bottom Tube (without cap)	76 x 3/5 ml	11 x 110				
	75003700	32	1.5/2 ml Conical Microtube	136 x 2 ml	11 x 45				



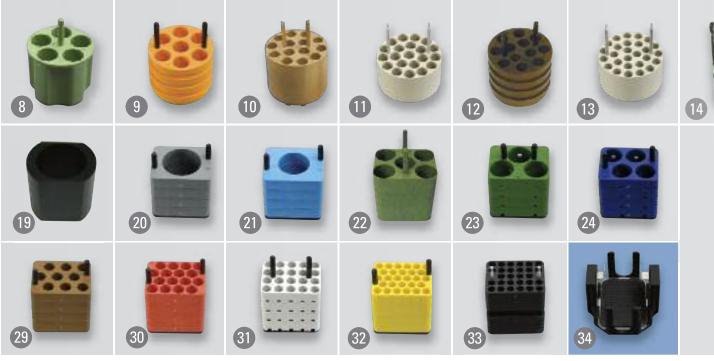
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ermo Scientific Rotors and Adapters						Heraeus Multifuge X1/X1R		Heraeus Multifugo X3/X3R	
Cat. N			Description	Rotor Capacity (Places x Volume)	Max Tube Dimensions (Ø x L, mm)	Max Speed (rpm)	Max RCF (xg)	Max Speed (rpm)	Max RCF (xg)
750036	607		TX-750 Swinging Bucket Rotor						
750036	808		Round Buckets (set of 4), 90°, R <sub>max</sub> 195 mm	4 x 750 ml		n/a	n/a	4700	4810
750036	75003609		ClickSeal Biocontainment Lids for Round Buckets (set of 4	)					
750036	75003610		Replacement O-rings for Lids (set of 4)						
	Adapters for Round Buckets (sets of 4 unless otherwise noted)								
No adapt	ter neede	d <b>1</b>	750 ml Polypropylene Bio-Bottle (75003699, pkg of 12)	4 x 750 ml	98 x 133				
Corning	no. <b>4311</b>	24	500 ml Corning® Conical Bottle	4 x 500 ml	98 x 133				
750037	792	2	250 ml Corning Conical Bottle (in open buckets only)	4 x 250 ml	62.5 x 139				
750037	710	3	250 ml Nalgene® Oak Ridge Bottle	4 x 250 ml	62.5 x 139				
750037	710	3	225 ml and 175 ml BD Falcon Conical Bottle +BD no. 352090	4 x 225 ml	62.5 x 139				
750037	710	3	200 ml Nunc™ Conical Bottle + Nunc no. 377585	4 x 200 ml	62.5 x 139				
750037	710	3	175 ml Nalgene Bottle + Nalgene no. DS3126-0175	4 x 175 ml	62.5 x 139				
750037	713	4	100 ml Round Bottom Open-Top Tube	8 x 100 ml	45 x 123				
750037	714	5	50 ml Conical Tube (includes sealing vessel)*	12 x 50 ml	29.5 x 120				
750036	638	6	50 ml Conical Tube	28 x 50 ml	29.5 x 120				
750037	715	7	50 ml Round Bottom Tube	28 x 50 ml	29.5 x 120				
750038	824	8	50 ml Conical or Skirted Tube	20 x 50 ml	29.5 x 120				
750037	716	9	25 ml Universal Conical or Skirted Tube	28 x 25 ml	25.5 x 120				
750036	639	10	15 ml Conical Tube	56 x 15 ml	17 x 122				
750037	719	1	15 ml Blood Collection Tube (17 x 125 mm) (inner circle only	) 32 x 15 ml	17 x 134				
750037	718	12	14 ml Conical Urine Tube	48 x 14 ml	18 x 124				
750037	719	1	10 ml Blood Collection or 15 ml Corex/Kimble Tube	84 x 10/15 ml	17 x 117				
750037	723	13	5/7 ml or 4.5/6 ml Blood Collection Tube Blood	108 x 5/7 ml	13 x 116				
750037	724	14	5 ml RIA or Round Bottom Tube (without cap)	148 x 5 ml	13 x 111				
750037	732	14	5/7 ml Round Bottom Tube (without cap) with Decanting Aid	148 x 5/7 ml	13 x 111				
750037	733	15	1.5/2 ml Conical Microtube	192 x 2 ml	11 x 50				
750083	383	16	T-75 Nunc Easy Flask (set of 2)	4 x T-75	-				
750083	384	<b>D</b>	T-25 Nunc Easy Flask (set of 2)	8 x T-25	-				

<sup>&</sup>lt;sup>1</sup> Buckets and lids sold separately

 $<sup>{\</sup>bf *Sealed\ vessels\ can\ also\ be\ used\ with\ certified\ ClickSeal\ lids\ for\ double\ biocontainment\ protection.}$ 



	Thermo Scientific Rotors and Adapters						Heraeus Multifuge X1/X1R		Multifuge X3R
	Cat. No		Description	Rotor Capacity (Places x Volume)	Max Tube Dimensions (Ø x L, mm)	Max Speed (rpm)	Max RCF (xg)	Max Speed (rpm)	Max RCF (xg)
			TX-750 Swinging Bucket Rotor (continued)						
	75003614	18	Rectangular Buckets (set of 4), 90°, R <sub>max</sub> 195 mm	4 x 250 ml		n/a	n/a	4500 4700 <sup>3</sup> 4300 <sup>4</sup>	4415 4816 <sup>3</sup> 4031 <sup>4</sup>
1	75003615		ClickSeal Biocontainment Lids for Rectangular Buc	kets (set of 4)					
	75003616		Replacement O-rings for Lids (set of 4)						
			Adapters for Rectangular Buckets (sets of 4)						
	75003737	19	250 ml Flat Bottom Bottle	4 x 250 ml	63 x 130				
	75003738	20	150 ml Round Bottom Open-Top Tube	4 x 150 ml	56 x 124				
	75003742	21	100 ml Round Bottom Open-Top Tube	4 x 100 ml	46 x 124				
	75003685	22	50 ml Conical Tube	20 x 50 ml	30 x 121				
	75003749	23	50 ml Round Bottom Tube	12 x 50 ml	35 x 121				
	75003750	24	45 ml Flat/Round Tube	16 x 45 ml	30 x 121				
	75003755	25	25 ml Universal Tube	16 x 25 ml	26 x 121				
	75003756	26	25 ml DIN Round Bottom Tube	24 x 25 ml	26 x 121				
	75003684	27	15 ml Conical Tube	48 x 15 ml	17 x 120				
	75003758	28	14 ml Flanged Round Bottom Tube	36 x 14 ml	18 x 121				
	75003759	29	15 ml Conical Urine Tube	36 x 15 ml	17 x 124				
	75003767	30	10 ml Blood Collection or 15 ml DIN Tube	64 x 10/15 ml	17 x 118				
	75003768	31	5/7 ml or 4.5/6 ml Blood Collection Tube	80 x 5/7 ml	14 x 118				
	75003769	32	5/7 ml Round Bottom Tube	112 x 5/7 ml	13 x 119				
	75003770	33	1.5/2 ml Conical Microtube	224 x 2 ml	11 x 50				
	<b>75003795</b> (set	t of 2)	Carriers for microplates and T-75 Horizontal Flasks,			,		4700	2000

 $4 \times 1$  Deepwell  $H_{max}$ : 60 mm

n/a

n/a

34

75003617 (set of 4)

including plate trays and neoprene pad, 90°  $R_{\text{max}}$  155 mm

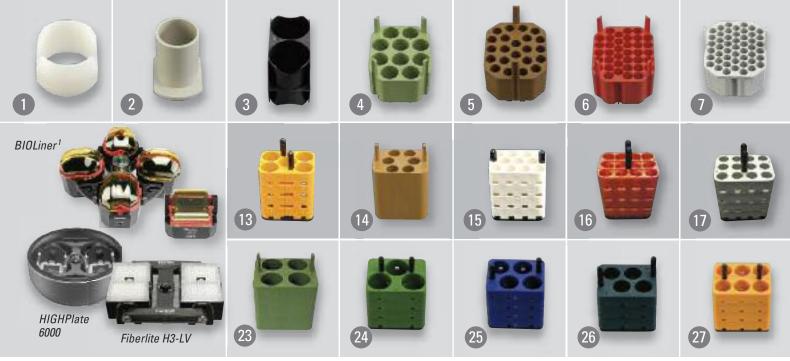
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<sup>&</sup>lt;sup>3</sup> 230 V refrigerated centrifuge

<sup>&</sup>lt;sup>4</sup> 120 V ventilated and refrigerated centrifuge



	Thermo S	Scientific	Rotors and Adapters				Multifuge /X1R		Multifuge X3R
	Cat. No		Description	Rotor Capacity (Places x Volume)	Max Tube Dimensions (Ø x L, mm)	Max Speed (rpm)	Max RCF (xg)	Max Speed (rpm)	Max RCF (xg)
	75003667		BIOLiner High Capacity Rotor						
	75003668		BIOLiner Buckets (set of 4), 90°, R <sub>max</sub> 200 mm	4 x 750 ml		n/a	n/a	3500	2739
4	75003669		ClickSeal Biocontainment Lids for BIOLiner Buckets (se	et of 4)					
	75003688		Replacement O-rings for Lids						
			Adapters for BIOLiner Buckets (sets of 4)						
	75003692	0	750 ml Flat Bottom Bottle with all round adapters listed						
			for TX-750 round bucket	4 x 750 ml	98 x 124				
	75003692	0	500 ml Corning Conical Bottle + Corning cushion no. 431124	4 x 500 ml	98 x 124				
	75003691	2	250 ml Corning Conical Bottle <sup>5</sup>	4 x 250 ml	62 x 145				
	75003675	3	250 ml Nalgene Oak Ridge Bottle	8 x 250 ml	62 x 130				
	75003675	3	225 ml and 175 ml BD Falcon Conical Bottle + BD no. 35209	0 8 x 225 ml	62 x 130				
	75003675	3	200 ml Nunc Conical Bottle + Nunc cushion no. 377585	8 x 175 ml	62 x 130				
	75003674	4	50 ml Conical Tube	40 x 50 ml	30 x 120				
	75003673	5	15 ml Conical Tube	88 x 15 ml	17.5 x 121				
	75003697		9/10 ml Sarstedt Tube	100 x 9/10 ml	17 x 110				
	75003672	6	10 ml Blood Collection Tube	148 x 10 ml	17 x 110				
	75003671	Ö	5/7 ml Blood Collection Tube	196 x 5/7 ml	14 x 110				
	75003709		4.5/6 ml Blood Collection Tube (Greiner)	164 x 4.5/6 ml	14 x 110				
	75003796	(set of 2)	Microplate Carriers for BIOLiner Rotor, R <sub>max</sub> 179 mm 4	x 4 Standard or	H <sub>max</sub> : 60 mm				
	75003670	(set of 4)		4 x 1 Deepwell	IIIdA	n/a	n/a	3500	2451
4	75003689		Sealing Lids for BIOLiner Microplate Carriers (set of 4)	•		,	-7		
	75003626		Replacement O-rings for Microplate Carrier Lids (set of 4	1)					
•	75003606		HIGHPlate 6000 Rotor, R <sub>max</sub> 139 mm	2 x 5 Standard	H <sub>max</sub> : 80 mm	n/a	n/a	6300	6168
			Fiberlite H3-LV Large Volume Swinging 4	x 7 Standard or					
	75003665		Bucket Rotor, 90°, R <sub>max</sub> 189mm	2 x 4 Deepwell	H <sub>max</sub> : 100 mm	n/a	n/a	3600	2738
				x 3 Standard or					
	75003624		· · · · · · · · · · · · · · · · · · ·	2 x 1 Deepwell	H <sub>max</sub> : 65 mm	4000	2272	4000	2272
•	75003625		Sealed Carriers, includes trays and lids (set of 2)		H <sub>max</sub> : 45 mm			, OK	2
· ·	75002011		Replacement Sealing Lids (set of 2)					S SOLUTION	F
•	75002012		Replacement O-rings (set of 4 with grease)					820, FB.	(A)

<sup>&</sup>lt;sup>1</sup> Buckets and lids sold separately <sup>4</sup> 120 V ventilated and refrigerated centrifuge <sup>5</sup> In open buckets only



	Thermo S	c Rotors and Adapters		Heraeus I		Heraeus Multifuge X3/X3R			
	Cat. No		Description	Rotor Capacity (Places x Volume)	Max Tube Dimensions (Ø x L, mm)	Max Speed (rpm)	Max RCF (xg)	Max Speed (rpm)	Max RCF (xg)
*	75003621		BIOShield 720 High Speed Swinging Bucke 90°, R <sub>max</sub> 162 mm Adapters for BIOShield 720 Rotor (sets of 4)	et Rotor, 4 x 180 ml		6300	7188	n/a	n/a
	75003693 75003813 75003814	8	180 ml Polypropylene Screw Cap Bottle (75003800, pkg 150 ml Round Bottom Open-Top Tube 100 ml Round Bottom Open-Top Tube	of 12) 4 x 180 ml 4 x 150 ml 4 x 100 ml	56 x 123 50 x 122 44 x 120				
	75003677 75003816 75003818	10 11 12	50 ml Conical Tube 50 ml DIN Round Bottom Tube 25 ml Universal Tube	8 x 50 ml 8 x 50 ml 16 x 25 ml	34.5 x 116 34 x 109 22.5 x 105				
	75003817 75003678 75003820	13 14 15	25 ml DIN Round Bottom Tube 15 ml Conical Tube 15 ml Sarstedt Tube	20 x 25 ml 24 x 15 ml 44 x 15 ml	25 x 107 17 x 120 17 x 103				
	75003701 75003821 75003822	16 17 18	10 ml Blood Collection Tube 5/7ml Blood Collection Tube 5/7ml Round Bottom Open-Top Tube	48 x 10 ml 48 x 5/7 ml 80 x 5/7 ml	17 x 105 13 x 106 13 x 104				
	75003823	19	1.5/2ml Conical Microtube  BIOShield 1000A High Speed Swinging Bud 90°, R <sub>max</sub> 178 mm	160 x 2 ml	11 x 45		-/-	C000	7464
<b>♣</b>	<b>75003603</b> 75003737	20	Adapters for BIOShield 1000A Rotor (sets of 4) 250 ml Nalgene Flat Bottom Bottle	4 x 250 ml	62.5 x 124	n/a	n/a	6000	7164
	75003738 75003742	21	150 ml Round Bottom Open-Top Tube 100 ml Round Bottom Open-Top Tube	4 x 150 ml 4 x 100 ml	56.5 x 119 45.5 x 120				
	75003643 75003749 75003750	23 24 25	50 ml Conical Tube 50 ml Round Bottom Tube 45 ml Flat/Round Tube	16 x 50 ml 12 x 50 ml 16 x 45 ml	29.5 x 117 35 x 113 30 x 113				
	75003755 75003756 75003642	26 27 28	25 ml Universal Tube 25 ml DIN Round Bottom Tube 15 ml Conical Tube	16 x 25 ml 24 x 25 ml 36 x 15 ml	26 x 113 25.5 x 113 17 x 121				
	75003758 75003759 75003767	29 30 31	14 ml Flanged Round Bottom Tube 15 ml Conical Urine Tube 10 ml Blood Collection or 15 ml DIN Tube	36 x 15 ml 36 x 15 ml 64 x 10/15 ml	18 x 113 17 x 115 17 x 109				
	75003767 75003768 75003769	32	5/7 ml Blood Collection Tube 5/7 ml Round Bottom Tube	80 x 5/7 ml 112 x 5/ 7 ml	14 x 109 13 x 110			AS SOLUTIONS	
	75003770	34	1.5/2 ml Conical Microtube	224 x 2 ml	11 x 50			So 18th of	o 04

# **Fixed Angle Rotors**









Fiberlite F14-6x250LE

Fiberlite F15-6x100y

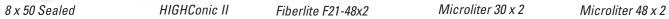
Fiberlite F13-14x50cy

Fiberlite F15-8x50cy

CLINIConic

ermo Scientific Rotors and Adapters							eus Multifuge X3/X3R	
Cat. No	Description	Rotor Capacity (Places x Volume)	Max Tube Dimensions (Ø x L, mm)	Max Speed (rpm)	Max RCF (xg)	Max Speed (rpm)	Max RCF (xg)	
	Fiberlite F14-6x250LE Fixed Angle Rotor,					11000	1853	
75003662	23°, R <sub>max</sub> 137 mm	6 x 250 ml	62 x 125	n/a	n/a	10000 <sup>4</sup>	1531	
021-062153	O-ring Refresher Kit							
	Adapters for F14-6x250LE Rotor (sold separately unless other	wise noted)						
75100136	50 ml Conical Tube (set of 2)	6 x 50 ml	30 x 121					
010-0138	50 ml Round Bottom Tube (set of 2)	6 x 50 ml	30 x 121					
00449	30 ml Glass Round Bottom Tube	18 x 30 ml	24 x 105					
75101073	15 ml Conical Tube	30 x 15 ml	17 x 121					
00389	10 ml Round Bottom Tube	42 x 10 ml	17 x 110					
00369 + 00456	7 ml Round Bottom Tube	30 x 7 ml	14 x 110					
00388	5 ml Round Bottom Tube	72 x 5 ml	13 x 80					
0000		72.80 1111	10 % 00					
75003698	Fiberlite F15-6x100y Fixed Angle Rotor, 25°, R <sub>max</sub> 98 mm	6 x 100 ml	38 x 105	15000	24652	15000	246	
·		0 X 100 IIII	30 X 103	13000	24032	13000	2400	
021-069031	0-ring Refresher Kit							
	Adapters for F15-6x100y Rotor (sold separately)	0 04 1	00 105					
No adapter needed	94 ml Nalgene Tube	6 x 94 ml	38 x 105					
75003103	50 ml Conical Tube	6 x 50 ml	30 x 121					
75003095	15 ml Conical Tube	6 x 15 ml	17 x 123					
75003102	50 ml Round Bottom Tube	6 x 50 ml	30 x 117					
75003094	38 ml Round Bottom Tube	6 x 38 ml	26 x 110					
76002906	16 ml Round Bottom Tube	6 x 16 ml	18 x 123					
75003093	12 ml Round Bottom Tube	12 x 12 ml	16 x 95					
75003092	6.5 ml Round Bottom Tube	12 x 6.5 ml	13 x 114					
75003091	3.5 ml Round Bottom Tube	24 x 3.5 ml	11 x 100					
76002905	1.5/2 ml Conical Microtube	24 x 2 ml	11 x 40					
	Fiberlite F13-14x50cy Fixed Angle Rotor,					10000	1710	
75003661	34°, R <sub>max</sub> 153 mm	14 x 50 ml	30 x 121	8500	12359	9250 <sup>4</sup>	1463	
021-149027	O-ring Refresher Kit							
	Adapters for F13-14x50cy Rotor (sold separately)							
010-0378	15 ml Conical Tube (BD and Corning)	14 x 15 ml	17 x 121					
010-1340	15 ml Conical Tube (Nunc) and Filtration Devices	14 x 50 ml	17 x 121					
	Fiberlite F15-8x50cy Fixed Angle Rotor,			14500	24446			
75003663	25°, R <sub>max</sub> 104 mm	8 x 50 ml	30 x 121	14000 <sup>4</sup>	<b>22789</b> <sup>4</sup>	14500	2444	
021-085077	0-ring Refresher Kit							
	Adapters for F15-8 x 50cy Rotor (sold separately)							
010-0378	15 ml Conical Tube (BD and Corning)	8 x 15 ml	17 x 121					
010-1340	15 ml Conical Tube (Nunc) and Filtration Devices	14 x 50 ml	17 x 121					
75003623	CLINIConic Fixed Angle Rotor, 37°, R <sub>max</sub> 140 mm	30 x 15 ml		5650	4997	n/allon	n/a	
	Adapters for CLINIConic Rotor					250, 160.	N.	
No adapter needed	15 ml Round/Conical Bottom Tube	30 x 15 ml	16.5 x 131			AN A. P.	6 04	
75003702	10 ml Round Bottom Tube	30 x 10 ml	16.5 x 95		atelo	WW 36"	tes.	
11172596	7 ml Round Bottom or Blood Collection Tube (each)	30 x 7 ml	16.5 x 131			XAS OO		
11172595	5 ml Round Bottom or Blood Collection Tube (each)	30 x 5 ml	13 x 95					





Therm	o Scientific R		Heraeus Multifuge X1/X1R		Multifuge X3R			
	Cat. No	Description	Rotor Capacity (Places x Volume)	Max Tube Dimensions (Ø x L, mm)	Max Speed (rpm)	Max RCF (xg)	Max Speed (rpm)	Max RCF (xg)
<b>*</b>	75003694	8 x 50 ml Individually Sealed Fixed Angle Rotor, $45^{\circ}$ , $R_{\text{max}}$ 143 mm	8 x 50 ml		6700 6500 <sup>4</sup>	7177 6755 <sup>4</sup>	n/a	n/a
•	75003689	Replacement O-rings (set of 12)						
		Adapters for 8 x 50 ml Sealed Rotor						
	No adapter needed	50 ml Conical Tube	8 x 50 ml	29.5 x 116				
•	75003620	HIGHConic II Aluminum Fixed Angle Rotor, 45°, R <sub>max</sub> 126 mm	6 x 94 ml	38 x 105	10350	15090	10350	15090
~	75003058	Replacement Sealing O-rings (set of 2 with grease)						
		Adapters for HIGHConic II Rotor (sold separately)						
	No adapter needed	94 ml Round Bottom Tube	6 x 94 ml	38 x 105				
	75003103	50 ml Conical Tube	6 x 50 ml	29.5 x 117				
	75003095	15 ml Conical Tube	6 x 15 ml	17 x 123				
	75003102	50 ml Round Bottom Tube	6 x 50 ml	29.4 x 117				
	75003094	38 ml Round Bottom Tube	6 x 38 ml	26 x 110				
	76002906	16 ml Round Bottom Tube	6 x 16 ml	18 x 123				
	75003093	12 ml Round Bottom Tube	12 x 12 ml	16 x 95				
	75003092	6.5 ml Round Bottom Tube	12 x 6.5 ml	13.5 x 114				
	75003091	3.5 ml Round Bottom Tube	24 x 3.5 ml	11 x 100				
	76002905	1.5/2 ml Conical Microtube	24 x 2 ml	11 x 40				
		Fiberlite F21-48x2 Fixed Angle Rotor,						
- 1	75003664	45°, R <sub>max</sub> 97 mm	48 x 2 ml	11 x 50	15200	25055	15200	25055
	021-489021	O-ring Refresher Kit						
		Adapters for F21-48 x 2 Rotor (sets of 24)						
	76003750	0.2 ml PCR Tube	48 x 0.25 ml	6 x 20				
	76003758	0.5 ml Microtube	48 x 0.5 ml	8 x 44				
	76003759	0.25 ml Microtube	48 x 0.25 ml	6 x 46				
		Microliter 30 x 2 Sealed Aluminum Fixed Angle R	Rotor,					
-	75003652	45°, R <sub>max</sub> 100 mm	30 x 2 ml	11 x 50	15200	25830	n/a	n/a
		Adapters for Microliter 30 x 2 Rotor (sets of 24)						
	76003750	0.2 ml PCR Tube	30 x 0.25 ml	6.5 x 20				
	76003758	0.5 ml Microtube	30 x 0.5 ml	8 x 44				
	76003759	0.25 ml Microtube	30 x 0.25 ml	6 x 46				
		Microliter 48 x 2 Sealed Aluminum Fixed						
1	75003602	Angle Rotor, 45°, R <sub>max</sub> 98 mm	48 x 2 ml	11 x 50	15200	25314	15200	25314
_		Adapters for Microliter 48x2 Rotor (sets of 24)						
	76003750	0.2 ml PCR Tube	48 x 0.25 ml	6.5 x 20				
	76003758	0.5 ml Microtube	48 x 0.5 ml	8 x 44			C	
	76003759	0.25 ml Microtube	48 x 0.25 ml	6 x 46			110	
							70. 9	

 $<sup>^{\</sup>rm 4}\,120$  V ventilated and refrigerated centrifuge

# Thermo Scientific Heraeus Multifuge Centrifuge Series







Specifications	Heraeus Multifuge X1/X1R	Heraeus Multifuge X3/X3R	Heraeus Multifuge X3F/X3FR			
Swinging Bucket Rotors						
Max Capacity	4 x 400 ml (with TX-400 rotor)	4 x 750 ml (with TX-75	0 and BIOLiner rotors)			
Max Speed	6300 rpm (with BIOShield 720 rotor)	6000 rpm (with BIOShield 1000A rotor)				
Max RCF	7188 xg (with BIOShield 720 rotor)	7164 xg (with BIOShield 1000A rotor)				
Fixed Angle Rotors						
Max Capacity	6 x 100 ml (with F15-6x100 rotor)	<u>'</u>	14-6x250LE rotor)			
Max Speed	15200 rpm (with microvolume rotors)	· · · · · · · · · · · · · · · · · · ·	icrovolume rotors)			
Max RCF	25830 xg (with 30x2 ml rotor)	25314 xg (with	48x2 ml rotor)			
Control System		Microprocessor				
Drive System	Direct	, brushless induction low profile m	otor			
Rotor Locking System		Auto-Lock III				
Imbalance Detection System		SMARTSpin				
Programs		99 (5 with direct access key)				
Temperature Set Range*		-10 °C to +40 °C				
Pre-Cooling Function*		Yes, with direct button				
Refrigeration System*		CFC free				
Pulse (Short) Run	Yes					
Acceleration / Deceleration Rates	9/10					
Centrifugation Chamber		Stainless Steel				
Max Timer Range		9h, 99min + continuous				
Sound Level (dBA) with swinging bucket rotor at top speed	< 61/ < 55* (TX-400)	< 61/ < 57* (TX-750)	< 64/ < 58* (TX-750)			
with F15-8x50 rotor at top speed	< 65	< 64	< 55/ < 57*			
Other Features	Certified ClickSeal biocontainment system, language selection, motorized lid latch					
Max Power Consumption (W) 120 V	850/1200*	1400				
230 V	1010/1400*	1700/	1950*			
Max Heat Output (BTU/h) 120 V	2901/4096*	47	76			
230 V	3447/4776*	5800/	6653*			
Dimensions						
Height (lid open)	87 cm / 34.3 in	90 cm / 35.4 in	138.5 cm/ 54.5 in 139 cm* / 54.7 in*			
Height (lid closed)	36 cm / 14.2 in	36 cm / 14.2 in	79 cm / 31.1 in			
Width	44 cm / 17.3 in 62.3 cm* / 24.5 in*	56.5 cm / 22.2 in 74.5 cm* / 29.3 in*	56.5 cm / 22.2 in			
Depth	60.5 cm / 23.8 in	67 cm / 26.4 in	67 cm / 26.4 in			
Weight	57.5 kg / 126.8 lb 91.5 kg* / 201.7 lb*	86 kg / 189.6 lb 116 kg* / 255.7 lb*	152.5 kg / 336.2 lb 142.5 kg* / 314.2 lb*			
Technical Standards	IEC 61010-1, IEC 61010-2-02	0, IEC 61010-2-101, 230 V only: EN 2	292, EN 61326, EN 55011B			
Certifications	UL listed, CSA certified, CE marked,					
Ordering Information	Heraeus Multifuge X1/X1R	Heraeus Multifuge X3/X3R	Heraeus Multifuge X3F/X3FR			
Heraeus Multifuge, ventilated, 230 V, 50/60 Hz	75004210	75004500	75004530			
Heraeus Multifuge, ventilated, 120 V, 60 Hz	75004211	75004501	75004531			
Heraeus Multifuge, refrigerated, 230 V, 50/60 Hz	75004250	75004515	75004536			
Heraeus Multifuge, refrigerated, 120 V, 60 Hz	75004251	75004516	75004537			

<sup>\*</sup>Refrigerated models

The quality of the procedures used to design, manufacture, sell and service the Heraeus Multifuge X1 and Multifuge X3 centrifuge series is certified and maintained in accordance to the **ISO 13485** international standard.

Our effort to continuously improve our formalized business processes is certified and regularly audited in conformance with **ISO 9000** family of Quality Standards.

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North America: USA/Canada +1 866 984 3766 (866-9-THERMO)

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Europe: Austria +43 1 801 40 0, Belgium +32 53 73 42 41, France +33 2 2803 2180, Germany national toll free 08001-536 376, Germany international +49 6184 90 6940, Italy +39 02 95 05 92 54, Netherlands +31 76 579 55 55, Nordic/Baltic countries +358 9 329 10200, Russia/CIS +7 (812) 703 42 15, Spain/Portugal +34 93 223 09 18, Switzerland +41 44 454 12 12, UK/Ireland +44 870 609 9203

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