



# General Brochure

## AGILITY



## TRUST

## INGENUITY

*Ingeniously Practical*

*Asia Pacific*

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## OHAUS Corporation

Headquartered in Parsippany, NJ, OHAUS Corporation manufactures an extensive line of high-precision electronic and mechanical balances and scales that meet the weighing needs of virtually every industry. We are a global leader in the laboratory, industrial, and education channels as well as a host of specialty markets, including the food preparation, pharmacy and jewelry industries. An ISO 9001:2008 manufacturer, OHAUS products are precise, reliable and affordable, and are backed by industry-leading customer support. For additional information, visit [www.ohaus.com](http://www.ohaus.com).

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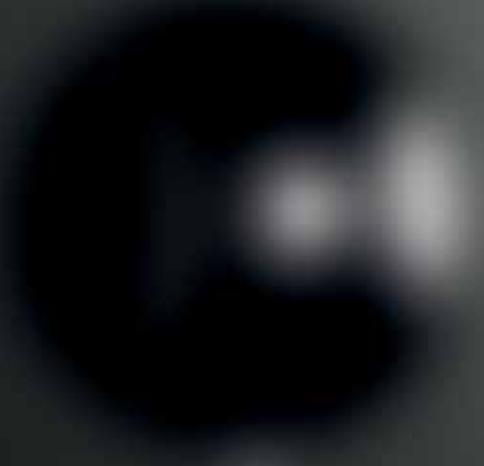
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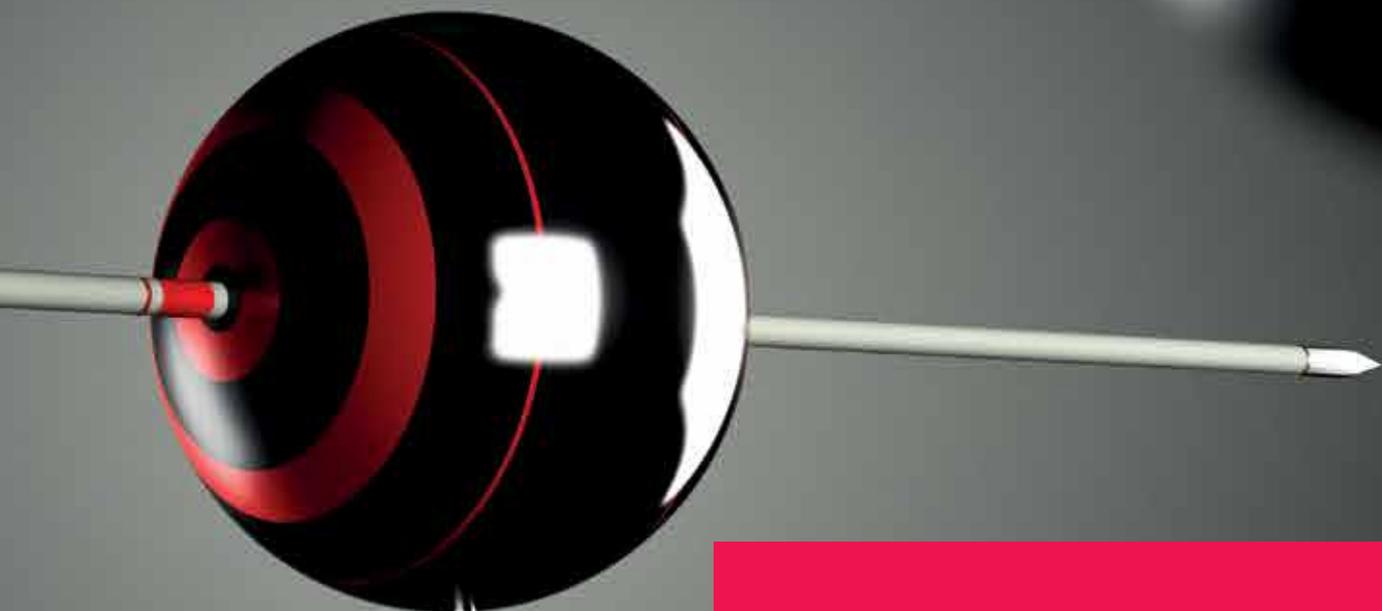
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# Analytical & Precision Balance





## Analytical & Precision Balance

Explorer Semi-Micro Balances

Explorer Analytical Balances

Adventurer® Analytical

Pioneer® Semi-Micro

Pioneer® Analytical

PR Analytical

Explorer® Precision

Adventurer™ Precision

Pioneer®PX Precision

PR Precision

Explorer® High Capacity

# Explorer Semi-Micro Balances



- Explorer's weighing cells precision-machined from a solid metal block, together with AutoCal™ provides exceptional accuracy and durability suitable for laboratory and industrial environments.
- Features such as four-level user management with password protection, and un-editable system log plus a high level of configurability make Explorer balances well suited for regulated applications.
- Equipped with a color touchscreen display that enhances the user-experience. In addition, touchless sensors, automatic draftshield doors (on select models) and ionizer ensure the integrity of results.



Automatically open side draftshield doors\* with four programmable touchless sensors



Built-in ionizer neutralizes static charges

Parts Counting	Check-Weighing	Dynamic/Animal weighing	Percent Weighing	Totalization	Peak Hold	Statistics	Filling
Pipette Adjustment	Density Determination	Formulation	Differential Weighing	SQC	Internal Calibration	GLP Data Output	Time/Date
RS232/USB Interface	Weigh Below Hook	Backlit Touchscreen	Ethernet Interface (Optional)	OIML Approved	Gross/Net/Tare	Fill Weight Variation	Routine Repeatability Test
RFID	System Log						

Model	EX125D	EX125	EX225D	EX225D/AD	EX225/AD
Capacity	52 g / 120 g	120 g	120 g/220g	120 g/220 g	220 g
Readability (d)	0.01 mg / 0.1 mg	0.01 mg	0.01 mg / 0.1 mg	0.01 mg / 0.1 mg	0.01 mg
Repeatability (20 g) (std. dev.)				0.015 mg	
Linearity				±0.1mg	
Stabilization Time				0.1 mg: ≤3 second, 0.01 mg: ≤8 second	
Typical Min-weight (USP, u=0.10%, k=2)				20.0 mg	
Optimized Min-weight (USP, u=0.10%, k=2) SRP≤0.41d				9.0 mg	
Pan Size (mm)				Ø 80	



# Explorer Analytical Balances

- Explorer's weighing cells precision-machined from a solid metal block, together with AutoCal™ provides exceptional accuracy and durability suitable for laboratory and industrial environments.
- Features such as four-level user management with password protection, and un-editable system log plus a high level of configurability make Explorer balances well suited for regulated applications.
- Equipped with a color touchscreen display that enhances the user-experience. In addition, touchless sensors, automatic draftshield doors (on select models) and ionizer ensure the integrity of results.



Resistive touch screen display quickly responds to operator's touch



Four touchless sensors provide hands-free operation of tare, print, calibration, and other selectable functions.

Parts Counting	Check-Weighing	Dynamic/Animal weighing	Percent Weighing	Totalization	Peak Hold	Statistics	Filling
Pipette Adjustment	Differential Weighing	Formulation	Ingredient Costing	SQC	Gross/Net/Tare	Density Determination	Internal Calibration
Time/Date	GLP Data Output	Weigh Below Hook	Backlit Touchscreen	RS232/USB Interface	Ethernet Interface (Optional)	NTEP Certified (Optional)	OIML Approved
Fill Weight Variation	Routine Repeatability Test	RFID	System Log				

Model*	EX124	EX224	EX324
Automatic Door	EX124/AD	EX224/AD	EX324/AD
Capacity	120 g	220 g	320 g
Readability (g)		0.0001	
Repeatability std (g)		±0.0001	
Linearity (g)		±0.0002	
Stabilization Time (s)		≤2	≤3
Typical Min-Weight(g) (USP u=0.10%,k=2)		0.12	
Optimized Min-Weight (g) (USP, u=0.10%, k=2) SRP***≤0.41d		0.082	
PanSize (mm)		Ø 90	



Shown with SF40A impact printers.  
See page 17 for details.



High resolution, 5.7" color TFT display



QWERTY and numeric key pads to quickly input GLP and GMP data



Data transfer function helps to output data directly into leading software applications.

Explorer® Accessories	
OHAUS #	Description
83021102	Tower Mount for Display
83021083	Display Extension Cable
80253384	Density Determination Kit
80850043	Security Device (Laptop Lock)
83021085	Interface Cable, USB (Type A to B)
80252581	RS232 Cable and Adapter to 80251992 Printer
83021082	Ethernet Kit
80500524	RS232 Cable, PC 25 Pin
80500525	RS232 Cable, PC 9 Pin
30130303	ION-100A - Ionizer
30045641	SF40A Impact Printer
12120799	Paper reels for Printer SF40A
12120798	Ink ribbon for Printer SF40A
12122603	RS232 Cable SF40A Impact Printer
80251992	Compact Thermal Printer
30472064	Auxiliary Display AD7-RS



Display can be separated from the weighing base. Extension cable accessory extends remote use up to 10 feet.



# Adventurer Analytical Balances

Adventurer Analytical Balances

- Adventurer balances feature a color touchscreen, icon-based user interface, and an ergonomic design making them easy to configure and use.
- Features such as specialized weighing modes, multiple connectivity options, and AutoCal™ provide versatility and flexibility for a variety of applications.
- Durable construction, large weighing surfaces, a space-saving draftshield design, and full housing in-use cover allow for use in lab, education and industrial environments.



Parts Counting	Dynamic/Animal weighing	Checkweighing	Percent Weighing	Totalization	Display Hold
Formulation	Internal Calibration (Optional)	Time/Date	GLP Data Output	Backlit Touchscreen	Weigh Below Hook
RS232/USB (2nd Interface Optional)	OIML Approved (Optional)	NTEP Certified (Optional)	Gross/Net/Tare		



Save to USB function



Color Touchscreen



Model	AX124	AX224	AX324
External Calibration	AX124/E	AX224/E	-
Capacity (g)	120	220	320
Readability (g)		0.0001	
Linearity (g)		± 0.0002	
Stabilization Time (s)		≤3	
Typical Min-weight (g) (USP, u=0.10%, k=2)		0.20	
Optimized Min-weight (g) (USP, u=0.10%, k=2) SRP≤0.41d		0.082	
Pan Size (mm)		∅ 90	

Adventurer Accessories	
OHAUS #	Description
30472064	Auxiliary Display AD7-RS
80253384	Density Determination Kit
83021085	Cable, USB Interface (Type A to B)
80850043	Security Device (Laptop Lock)
80500524	RS232 Cable, PC 25 Pin
80500525	RS232 Cable, PC 9 Pin
30045641	SF40A Impact Printer
12120799	Paper reels for Printer SF40A
12120798	Ink ribbon for Printer SF40A

# Pioneer Semi-Micro Balances



- The PX5 offers high accuracy and repeatability for essential weighing applications in laboratory, industrial and education settings at an economical price point.
- Featuring a cast metal lower housing, sub-pan and stainless steel weighing pan, the PX5 is durably constructed for versatile, long-term use.
- The PX5 features a second line display for additional information or guidance, a static removal bar for convenient grounding, and USB and RS232 connectivity for easy communication.

Parts Counting	Percent Weighing	Weigh Below Hook	Internal Calibration (Optional)	OIML Approved (Optional)	NTEP Certified (Optional)
Density Determination	Dynamic/Animal weighing	Time/Date	GLP Data Output		

InCal™ Models	PX85	PX125D*	PX225D*
Capacity (g)	82	52/120	82/220
Readability (g)	0.00001	0.00001/0.0001	0.00001/0.0001
Repeatability (STDEV) (g)	0.00003	0.00003/0.0001	0.00003/0.0001
Linearity (g)	±0.0001		
Stabilization Time (s)	10		
Typical Minimum Weight USP (USP, U=0.10%, k=2)	20 mg		
Optimized Minimum Weight (USP, U=0.10%, k=2)SRP≤0.41 d**	9 mg		
Platform Size (mm)	Ø 80		

\*D- Dual range balance  
 \*\* The value for SRP is the standard deviation for n replicate weighing (n≥10)



Large viewing angle with bright backlight LCD display. 2 line display provides additional information or guidance prompts

Pioneer™ Accessories	
OHAUS #	Description
30472064	Auxiliary Display AD7-RS
80253384	Density kit
83034024	Sinker for Liquid Density Determination
83021085	USB Interface Cable
80850043	Security Device
80500524	RS232 Cable (25-pin)
80500525	RS232 Cable (9-pin)
30093334	Dust Cover
30372546	IN-Use Cover
30045641	Printer SF40A
30130303	ION-100A
46001724	Power Adapter for Balance



A static removal bar (constructed of permanent static electric dissipative ABS) provides a convenient grounding location.



RS232 and USB device ports allow for easy connectivity to PCs and PLCs. Equipped with a security lock to prevent un-authorized equipment relocation.



# Pioneer Analytical Balances

- The PX offers high accuracy and repeatability for essential weighing applications in laboratory, industrial and education settings at an economical price point.
- Featuring a cast metal lower housing, sub-pan and stainless steel weighing pan, the PX is durably constructed for versatile, long-term use.
- PX features a second line display for additional information/guidance, & USB/RS232 connectivity for easy communication. Draftshield models feature a static removal (ESR) bar for convenient grounding.



Parts Counting	Percent Weighing	Weigh Below Hook	Internal Calibration (Optional)	OIML Approved (Optional)	NTEP Certified (Optional)
Density Determination	Dynamic/Animal weighing	Time/Date	GLP Data Output		



Large viewing angle with bright backlight LCD display. 2 line display provides additional information or guidance prompts



A static removal bar (constructed of permanent static electric dissipative ABS) provides a convenient grounding location.



RS232 and USB device ports allow for easy connectivity to PCs and PLCs. Equipped with a security lock to prevent un-authorized equipment relocation.

InCal™ Models	PX84	PX124	PX224
ExCal Models	PX84/E	PX124/E	PX224/E
Capacity (g)	82	120	220
Readability (g)		0.0001	
Repeatability (STDEV) (g)		0.0002	
Linearity (g)		±0.0002	
Stabilization Time (s)		3	
Typical Minimum Weight USP (USP, U=0.10%, k=2)		200 mg	
Optimized Minimum Weight (USP, U=0.10%, k=2)SRP≤0.41d**		82 mg	
Platform Size (mm)		Ø 90	

\*\* The value for SRP is the standard deviation for n replicate weighing (n≥10)

Pioneer™ Accessories	
OHAUS #	Description
30472064	Auxiliary Display AD7-RS
80253384	Density kit
83034024	Sinker for Liquid Density Determination
83021085	USB Interface Cable
80850043	Security Device
80500524	RS232 Cable (25-pin)
80500525	RS232 Cable (9-pin)
30093334	Dust Cover
30372546	IN-Use Cover
30045641	Printer SF40A
30130303	ION-100A
46001724	Power Adapter for Balance

# PR Analytical Balances



- The PR is equipped with 3 essential weighing modes, RS-232 connectivity for data transfer and storage, and internal calibration (in select models), making it ideal for routine weighing applications.
- Equipped with an easy-to-read, bright backlit display and a simple user interface, the PR is incredibly easy to operate, with almost no training required.
- The PR's small footprint saves desktop space while providing a large weighing surface. The PR is durably constructed, and features a stainless steel pan to withstand day-to-day use in the workplace.



Parts Counting



Percent Weighing



Time/Date



GLP Data Output

InCal Model™	PR124	PR224	PR223	PR423	PR523
ExCal Model	PR124/E	PR224/E	PR223/E	PR423/E	PR523/E
Capacity (g)	120	220		420	520
Readability (g)	0.0001			0.001	
Repeatability (STDEV) (g)	0.0001			0.001	
Linearity (g)	0.0002			0.002	
Stabilization Time (s)	3			2	
Typical Minimum Weight USP (USP, U=0.10%, k=2)	200 mg			2 g	
Optimized Minimum Weight (USP, U=0.10%, k=2) SRP≤0.41d*	82 mg			0.82 g	
Platform Size (mm)	Ø 90			Ø 120	

\* The value for SRP is the standard deviation for n replicate weighing (n≥10)  
 \* Only available in selected region



A large, bright backlit allows for easy viewing of results.

PR Accessories	
OHAUS #	Description
30472064	Auxiliary Display AD7-RS
80253384	Density Kit
83034024	Sinker for Liquid Density Determination
80850043	Security Device
80500524	RS232 Cable (25-pin)
30093334	Dust Cover
30372547	In-use Cover, (PR)
30045641	Printer SF40A
46001724	Power Adapter for Balance



Standard RS232 connectivity for easy data transfer.



# Explorer Precision Balances

Explorer Precision Balances

- Explorer's weighing cells precision-machined from a solid metal block, together with Auto-Cal™ provides exceptional accuracy and durability suitable for laboratory and industrial environments.
- Features such as four-level user management with password protection, and un-editable system log plus a high level of configurability make Explorer balances well suited for regulated applications.
- Equipped with a color touchscreen display that enhances the user-experience. In addition, touchless sensors, automatic draftshield doors (on select models) and ionizer ensure the integrity of results.



Parts Counting	Check-Weighing	Dynamic/Animal weighing	Percent Weighing	Totalization	Peak Hold	Statistics	Filling	Pipette Adjustment	Differential Weighing	Formulation
Ingredient Costing	SQC	Density Determination	Internal Calibration	Gross/Net/Tare	Time/Date	GLP Data Output	Weigh Below Hook	Backlit Touchscreen	RS232/USB Interface	Ethernet Interface (Optional)
NTEP Certified (Optional)	OIML Approved	Fill Weight Variation	Routine Repeatability Test	RFID	System Log					

Model	EX223**	EX423**	EX623**	EX1103**	EX2202	EX4202	EX6202	EX10202	EX6201	EX10201
External Calibration	EX223/E	EX423/E	-	-	EX2202/E	EX4202/E	EX6202/E	-	EX6201/E	-
Capacity (g)	220	420	620	1100	2200	4200	6200	10200	6200	10200
Readability (g)			0.001				0.01			0.1
Repeatability std (g)			±0.001				±0.01			±0.1
Linearity (g)			±0.002				±0.02			±0.2
Stabilization Time (s)			≤1.5				≤1			
Typical Min-Weight (g) (USP, u=0.10%, k=2)			1.2 g			12			120	
Optimized Min-Weight (g) (USP, u=0.10%, k=2) SRP***≤0.41d			0.82			8.2			82	
PanSize (mm)			Ø 130						190 × 200	

\*\*Includes draftshield.



High resolution, 5.7" color TFT display



Resistive touch screen display quickly responds to operator's touch



Adjustable viewing angle display



QWERTY and numeric key pads to quickly input GLP and GMP data



Four touchless sensors provide hands-free operation of tare, print, calibration, and other selectable functions.



Display can be separated from the weighing base. Extension cable accessory extends remote use up to 10 feet.



Tower mount accessory available

Explorer® Accessories	
OHAUS #	Description
83021102	Tower Mount for Display
83021083	Display Extension Cable
80253384	Density Determination Kit
83021084	Draftshield Kit (0.01g, 0.1g, excluding High Capacity models)
80850043	Security Device (Laptop Lock)
83021085	Interface Cable, USB (Type A to B)
80252581	RS232 Cable and Adapter to 80251992 Printer
83021082	Ethernet Kit
80500524	RS232 Cable, PC 25 Pin
80500525	RS232 Cable, PC 9 Pin
30045641	SF40A Impact Printer
12120799	Paper reels for Printer SF40A
12120798	Ink ribbon for Printer SF40A
80251992	Compact Thermal Printer
30472064	Auxiliary Display AD7-RS



# Adventurer Precision Balances

- Adventurer balances feature a color touchscreen, icon-based user interface, and an ergonomic design making them easy to configure and use.
- Features such as specialized weighing modes, multiple connectivity options, and AutoCal™ provide versatility and flexibility for a variety of applications.
- Durable construction, large weighing surfaces, a space-saving draftshield design, and full housing in-use cover allow for use in lab, education and industrial environments.



Parts Counting	Dynamic/Animal weighing	Check-weighing	Percent Weighing	Totalization	Display Hold	Time/Date	GLP Data Output	Backlit Touchscreen	Weigh Below Hook	Internal Calibration (Optional)
RS232/USB (2nd Interface Optional)	OIML Approved (Optional)	NTEP Certified (Optional)	Formulation	Gross/Net/Tare						

Model	AX223	AX423	AX523	AX622	AX1502	AX2202	AX4202	AX5202	AX4201	AX8201
External Calibration	AX223/E	AX423/E	AX523/E	AX622/E	AX1502/E	AX2202/E	AX4202/E	-	AX4201/E	AX8201/E
Capacity (g)	220	420	520	620	1520	2200	4200	5200	4200	8200
Readability (g)	0.001			0.01				0.1		
Repeatability std (g)	±0.001			±0.01				±0.1		
Linearity (g)	±0.002			±0.02				±0.2		
Stabilization Time (s)	≤2			≤1.5				≤1.5		
Typical Min-Weight (g) (USP, u=0.10%, k=2)	2.0			20.0				200.0		
Optimized Min-Weight (g) (USP, u=0.10%, k=2) SRP≤0.41d**	0.82			8.2				82		
Pan Size (mm)	Ø 130			175 x 195						

Adventurer Accessories	
OHAUS #	Description
30472064	Auxiliary Display AD7-RS
80253384	Density Determination Kit
83021085	Cable, USB Interface (Type A to B)
80850043	Security Device (Laptop Lock)
80500524	RS232 Cable, PC 25 Pin
80500525	RS232 Cable, PC 9 Pin
30045641	SF40A Impact Printer
12120799	Paper reels for Printer SF40A
12120798	Ink ribbon for Printer SF40A



# Pioneer Precision Balances



Pioneer Precision Balances



- The PX offers high accuracy and repeatability for essential weighing applications in laboratory, industrial and education settings at an economical price point.
- Featuring a cast metal lower housing, sub-pan and stainless steel weighing pan, the PX is durably constructed for versatile, long-term use.
- PX features a second line display for additional information/guidance, & USB/RS232 connectivity for easy communication. Draftshield models feature a static removal (ESR) bar for convenient grounding.



Parts Counting	Percent Weighing	Weigh Below Hook	Internal Calibration (Optional)	OIML Approved (Optional)	NTEP Certified (Optional)	Density Determination	Dynamic/Animal weighing	Time/Date	GLP Data Output

InCal™ Models	PX163	PX223	PX323	PX423	PX523
ExCal Models	PX163/E	PX223/E	PX323/E	PX423/E	PX523/E
Capacity (g)	160	220	320	420	520
Readability (g)	0.001				
Repeatability (STDEV) (g)	0.002				
Linearity (g)	±0.002				
Stabilization Time (s)	2				
Typical Minimum Weight (g) (USP, u=0.10%, k=2)	2				
Optimized Minimum Weight (g) (USP, u=0.10%, k=2)SRP≤0.41d**	0.82				
Platform Size (mm)	Ø120				

Note: Models above includes draftshield  
 \*\*The value for SRP is the standard deviation for n replicate weighing (n≥10)



Large viewing angle with bright backlight LCD display. 2 line display provides additional information or guidance prompts to the user.



RS232 and USB device ports allow for easy connectivity to PCs and PLCs. Equipped with a security lock to prevent unauthorized equipment relocation.



InCal™ Models	PX822	PX1602	PX2202	PX3202	PX4202	PX5202	PX2201	PX4201	-	-
ExCal Models	PX822/E	PX1602/E	PX2202/E	PX3202/E	PX4202/E	PX5202/E	PX2201/E	PX4201/E	PX6201/E	PX8201/E
Capacity (g)	820	1600	2200	3200	4200	5200	2200	4200	6200	8200
Readability (g)	0.01						0.1			
Repeatability (STDEV) (g)	0.01						0.1			
Linearity (g)	±0.02						±0.2			
Stabilization Time (s)	1						1			
Typical Minimum Weight (g) (USP, u=0.10%, k=2)	20						200			
Optimized Minimum Weight (g) (USP, u=0.10%, k=2) SRP≤0.41d**	8.2						82			
Platform Size (mm)	Ø180						Ø180			

\*The value for SRP is the standard deviation for n replicate weighing (n≥10)

Pioneer™ Accessories	
OHAUS #	Description
30472064	Auxiliary Display AD7-RS
80253384	Density kit
83034024	Sinker for Liquid Density Determination
83021085	USB Interface Cable
80850043	Security Device
80850043	Security Device
80500524	RS232 Cable (25-pin)
80500525	RS232 Cable (9-pin)
30093334	Dust Cover
30372546	IN-Use Cover
30045641	Printer SF40A
30130303	ION-100A
46001724	Power Adapter for Balance

# PR Precision Balances



- The PR is equipped with 3 essential weighing modes, RS-232 connectivity for data transfer and storage, and internal calibration (in select models), making it ideal for routine weighing applications.
- Equipped with an easy-to-read, bright backlit display and a simple user interface, the PR is incredibly easy to operate, with almost no training required.
- The PR's small footprint saves desktop space while providing a large weighing surface. The PR is durably constructed, and features a stainless steel pan to withstand day-to-day use in the workplace.



Parts Counting



Percent Weighing



Time/Date



GLP Data Output

InCal Model™	PR1602	PR2202	PR4202	PR4201	PR6201
ExCal Model	PR1602/E	PR2202/E	PR4202/E	PR4201/E	PR6201/E
Capacity (g)	1600	2200	4200		6200
Readability (g)	0.01		0.1		
Repeatability (STDEV) (g)	0.01		0.1		
Linearity (g)	0.02		0.2		
Stabilization Time (s)	1				
Typical Minimum Weight (g) (USP, u=0.10%, k=2)	20		200		
Optimized Minimum Weight (g) (USP, u=0.10%, k=2) SRP≤0.41d*	8.2		82		
Platform Size (mm)	Ø 180				

\* Only available in selected region



A large, bright backlit allows for easy viewing of results.

PR Accessories	
OHAUS #	Description
30472064	Auxiliary Display AD7-RS
80253384	Density Kit
83034024	Sinker for Liquid Density Determination
80850043	Security Device
80500524	RS232 Cable (25-pin)
30093334	Dust Cover
30372547	In-use Cover, (PR)
30045641	Printer SF40A
46001724	Power Adapter for Balance



Standard RS232 connectivity for easy data transfer.



# Explorer High-Capacity Balances

Explorer High-Capacity Balances

- Equipped with a weighing cell that's precision-machined from a solid metal block, Explorer balances are extremely accurate and durable, and are ideal for laboratory and industrial environments.
- Features such as four-level user management with password protection, and un-editable system log plus a high level of configurability make Explorer balances well suited for regulated applications.
- 2-D shock protection and IP54 base enclosure protect the balance from damage, while the AutoCal™ automatic internal calibration system ensures performance.



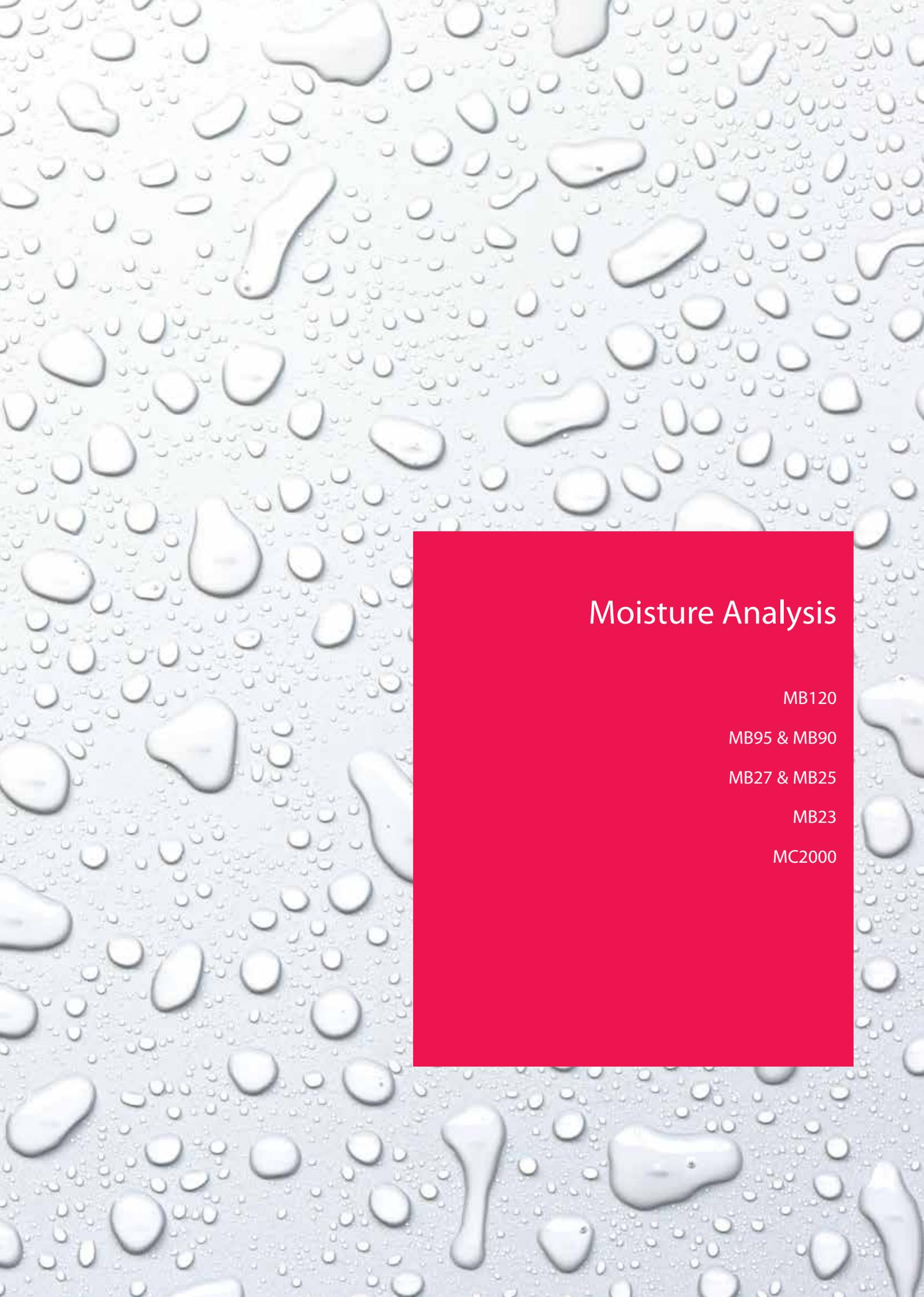
Check-Weighing	Dynamic/Animal weighing	Percent Weighing	Totalization	Peak Hold	Statistics	Internal Calibration
Gross/Net/Tare	Density Determination	Differential Weighing	Formulation	Ingredient Costing	SQC	Ethernet Interface (Optional)
GLP Data Output	Weigh Below Hook	Backlit Touchscreen	RS232/USB Interface	OIML Approved		



Shown with optional rolling feet and tower mount

Model	EX12001	EX24001	EX35001
Capacity (g)	12000	24000	35000
Readability (g)	0.1	0.1	0.1
Linearity (g)	±0.2	±0.2	±0.2
Stabilization Time (sec)	≤1	≤1	≤1
Typical Min-Weight (g) (USP, u=0.10%, k=2)	120	120	120
Optimized Min-Weight (g) (USP, u=0.10%, k=2) SRP***≤0.41d	82	82	82
Pan Size (mm)	377 x 311		





# Moisture Analysis

MB120

MB95 & MB90

MB27 & MB25

MB23

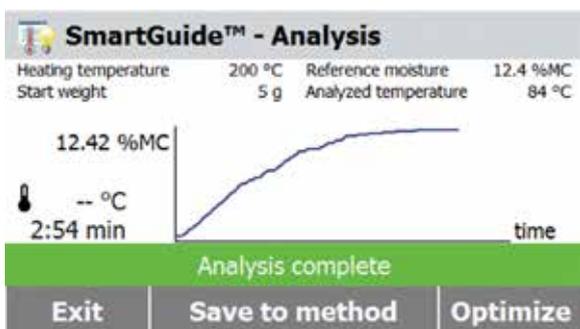
MC2000

# MB120



- Get started quickly with SmartGuide™. This revolutionary feature automatically analyzes a sample and creates a method, thereby removing the guesswork from the initial setup.
- The MB120 has the capability to produce fast and accurate results due to features such as a halogen heating system, customizable shut-off criteria and four built-in drying profiles.
- The MB120's allows storage of up to 100 methods and 1,000 measurement results. Stored results can be exported and methods can be shared across multiple devices.

Statistics	Moisture Analysis	Multi-language	Time/Date	GLP Data Output	Backlit Touchscreen	RS232 Interface



MB120 SmartGuide Analysis



MB120 open with sample

Model	MB120
Capacity (g)	120 g
Readability	0.01 %/0.001 g
Repeatability (g)	0.05 % (3 g sample) 0.015 % (10 g sample)
Pan Size (mm) Diameter	Ø 90
Temperature Range	40–230 °C
Heating Element	Halogen
Heating profile	Standard, Fast, Ramp, Step
Switch-off criteria	Manual, Timed, A30, A60, A90, Autofree mg/s, Autofree %/s
Method and result	100 methods and total 1000 test results
Others	Temperature guide, User management system
Dimensions (W×H×D) (mm)	210 × 180 × 350
Displays	%moisture, %solids, %regain, time, temperature, weight, method name, drying curve and statistics

MB Accessories	
OHAUS #	Description
30246947	Pan Holder, MB90 MB120
30284478	In-Use-Cover, Accessory, MB90 MB120
30284477	Scoop, Accessory, MB90 MB120
11113857	Temperature Calibration Kit
80850043	Anti-Theft Device, MB AX EX
80850086	Pan, Aluminum, Set(80), MB Series
80850087	Filter, Glass Fiber, Set(200)
80252477	Cage, Sample, MB Series
80252478	Pan, Reusable, Set(3), 7mm, MB Series
80252479	Pan, Reusable, Set(3), 14mm, MB Series
30045641	Printer, Impact, SF40A



# MB95

- MB95's precisely controlled halogen heating dries samples quickly and ensures uniform heating to yield fast. Four drying profiles and five switch-off criteria help to perform customized sample tests.
- MB95 can help you store up to 20 methods and 200 total results, for statistical analysis of measurements.
- Designed with effortless maintenance in mind, the MB95 features a removable pan handler and heating chamber components that make cleaning quick and easy—no tools needed.



Statistics	Moisture Analysis	Multi-language	Time/Date	GLP Data Output	Backlit Touchscreen	RS232 Interface

# MB90



- Halogen heating increases efficiency for faster results.
- Intuitive touchscreen menu offers step-by-step guidance for any application.
- Tool-free cleaning for easy maintenance.



Statistics	Moisture Analysis	Multi-language	Time/Date	GLP Data Output	Backlit Touchscreen	RS232 Interface

Model	MB95	MB90
Capacity (g)	90 g	90 g
Readability	0.01 %/0.001 g	0.01 %/0.001 g
Repeatability (g)	0.1 % (3 g sample) 0.018 % (10 g sample)	0.18 % (3 g sample) 0.02 % (10 g sample)
Pan Size (mm) Diameter	Ø 90	
Temperature Range	40–200 °C	40–200 °C
Heating Element	Halogen	
Heating profile	Standard, Fast, Ramp, Step	Standard, Fast
Switch-off criteria	Manual, Timed, Auto(30, 60, 90 seconds)	Manual, Timed, Auto
Method and result	20 methods and total 200 test results	2 methods and total 100 test results
Dimensions (W×H×D) (mm)	210 × 180 × 350	
Displays	%moisture, %solids, %regain, time, temperature, weight, method name, drying curve and statistics	

MB Accessories	
OHAUS #	Description
30246947	Pan Holder, MB90 MB95
30284478	In-Use-Cover, Accessory, MB90 MB95
30284477	Scoop, Accessory, MB90 MB95
11113857	Temperature Calibration Kit
80850043	Anti-Theft Device, MB AX EX
80850086	Pan, Aluminum, Set(80), MB Series
80850087	Filter, Glass Fiber, Set(200)
80252477	Cage, Sample, MB Series
80252478	Pan, Reusable, Set(3), 7mm, MB Series
80252479	Pan, Reusable, Set(3), 14mm, MB Series

# MB27



- The MB27 provides accurate results at 0.01%, 0.001g. With a large capacity of 90 g.
- Simple to operate, Just press and hold the temperature or time buttons to set drying parameters.
- The compact footprint (17 × 14 × 28 cm) of the OHAUS MB27 is designed to take up less space, and easy to clean.



Moisture Analysis



Backlight



RS232 Interface



# MB25

- The MB25 features a bright backlit LCD and easy one-button setup for simple use and menu navigation.
- The MB25 utilizes a halogen heating element for swift drying of samples.
- The MB25's design makes it easy-to-clean and its compact size allows it to take up less space and fit into almost any work setting.



Moisture Analysis



Backlight



RS232 Interface

Model	MB27	MB25	MB23
Capacity (g)	90	110	110
Readability	0.01%/0.001g	0.05% / 0.005g	0.1% / 0.01g
Repeatability (g)	0.2% (3 g sample) 0.05% (10 g sample)	0.2% (3 g sample) 0.05% (10 g sample)	0.3% (3g sample) 0.2% (10g sample)
Pan Size Diameter(mm)	Ø 90		Ø 90
Timer	1 - 99 minutes, 30-second increments to 60 minutes		
Heating Element	Halogen		IR
Temperature Range	50° to 160° C in 1° C increments		
Dimensions (WxHxD) (mm)	170 x 130 x 280		
Displays	% moisture or % solids or weight (g), temperature, time		

MB Accessories	
OHAUS #	Description
11113857	Temperature Calibration Kit for all MB Models
30045641	Printer Impact SF40A
12120799	Paper reels for Printer SF40A
12120798	Ink Ribbon for Printer SF40A
80252475	In-Use Cover for MB25 and MB23
80850086	Pan, Aluminum, Set(80), MB Series
80850087	Filter, Glass Fiber, Set(200)
80850043	Anti-Theft Device, MB AX EX
80252476	Holder, Pan, MB Series, MB23/MB25/MB27/MB35/MB35
80252477	Cage, Sample, MB Series
80252478	Pan Reusable 7mm 3Pcs MB Series
80252479	Pan Reusable 14mm 3Pcs MB Series



## MB23

- The MB23 features a bright backlit LCD and easy one-button setup for simple use and menu navigation.
- The MB23 utilizes a metallic sheathed - no glass - infrared heating element for drying of samples.
- The MB23's design makes it easy-to-clean and its compact size allows it to take up less space and fit into almost any work setting.



Moisture Analysis



Backlight



RS232 Interface

## MC2000



- User-friendly touch-button design for easy operation.
- Temperature compensation system ensures accurate results in five seconds.
- The versatile MC2000 can test 50-grain categories (10 pre-programmed).



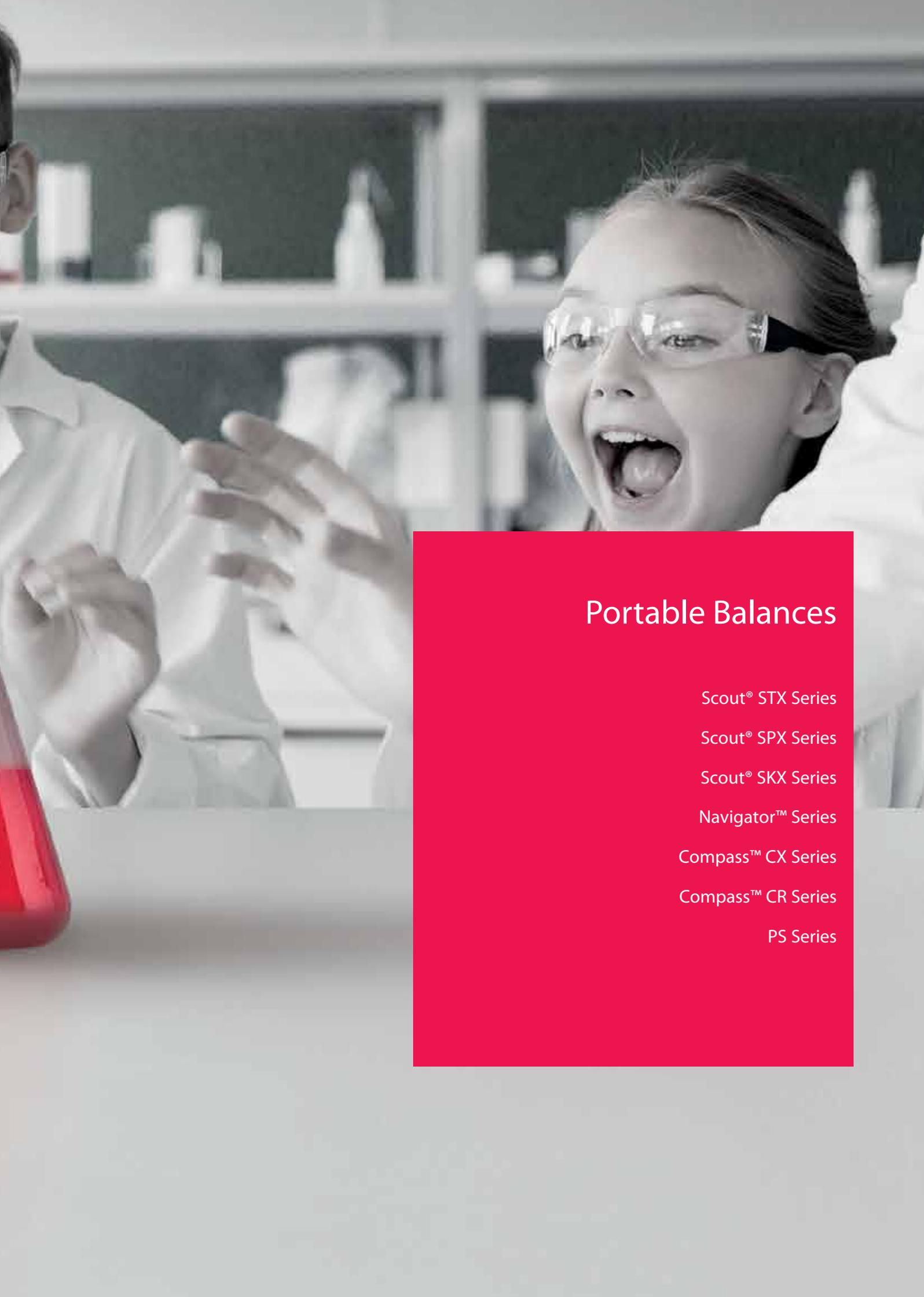
Moisture Analysis



Backlight

Model	MC2000
Moisture Range	3%-45%
Readability	0.1%
Repeatability	0.2%
Sample Volume	220 ml
Power	4 AA Batteries (included)
Operating Temperature Range	0 °C-50 °C
Display Type	Liquid crystal display (LCD) with backlight
Displays	% Moisture, Weight, Density, Statistics, Temperature
Sample Category	50 (10 pre-programmed)
Dimensions (W × H × D) (mm)	190 × 200 × 120





## Portable Balances

Scout® STX Series

Scout® SPX Series

Scout® SKX Series

Navigator™ Series

Compass™ CX Series

Compass™ CR Series

PS Series

# Scout® STX Series



- Large, intuitive, color touchscreen display allows for easy operation - guiding the user through every step of the weighing application.
- Advanced weighing technology allows for one-second stabilization time for increased productivity.
- Integrated overload protection system rated at ten times the capacity protects the balance in demanding environments.



Scout USB Device Interface



Scout STX Stacking with 6 Balances

Parts Counting	Percent Weighing	Totalization	Weigh Below Hook	Display Hold
RS232/ USB Interface (Optional)	Battery Power	Check-Weighing	Dynamic/ Animal weighing	Peak Hold
Density Determination	Mole Weighing	Backlit Touchscreen	Ethernet Interface (Optional)	



Integrated superior overload protection system rated at 10 times the capacity protects the balance in rugged and demanding environments. The space-saving, slim design allows for stackable storage.

Scout Accessories	
OHAUS #	Description
30268982	RS232 Interface Kit
30268983	USB Host Interface Kit (for flash drive)
30268984	USB Device Interface Kit (for PC)
30268986	Ethernet Interface Kit
30268987	Stacking & Storage Cover (6 pcs)
30268988	Stacking & Storage Cover (1 pc)
30045641	Printer, Impact, SF40A
30472063	Auxiliary display, AD7-MD
80850043	Security Device
30269020	Top Loading Kit for Density Determination
30269021	Carrying Case
30269022	In-use Cover

Model	STX123	STX223	STX222	STX421	STX422	STX621	STX622	STX1202	STX2201	STX2202	STX6201	STX8200
Capacity (g)	120	220		420		620		1200	2200		6200	8200
Readability (g)	0.001		0.01	0.1	0.01	0.1	0.01	0.1	0.01	0.01	0.1	1
Linearity (g)	0.003		0.01	0.1	0.01	0.1	0.02	0.03	0.1	0.03	0.2	1
Stabilization Time (s)	1.5		1	1	1	1	1	1.5	1	1.5	1	1
Construction	ABS housing and stainless steel pan											
Power Requirement	AC adapter (included) or 4 AA batteries (not included)											
Pan Size (W x D) (mm)	Ø 93			Ø 120		170 x 140	Ø 120				170 x 140	



# Scout® SPX Series

- Large backlit display improves readability in low light conditions and is easier to view from a distance.
- Integrated overload protection and impact-resistant pan allow the balance to operate efficiently in demanding environments.
- Increase productivity with advanced weighing technology and stabilization time as fast as one-second.



Parts Counting	Percent Weighing	Totalization	Weigh Below Hook	Display Hold	RS232/ USB Interface (Optional)
Battery Power	Check-Weighing	Peak Hold	Backlight	Ethernet Interface (Optional)	



Scout SPX Mole Weighing



Scout SPX Draftshield Revolve to Open

Scout Accessories	
OHAUS #	Description
30268982	RS232 Interface Kit
30268983	USB Host Interface Kit (for flash drive)
30268984	USB Device Interface Kit (for PC)
30268986	Ethernet Interface Kit
30268987	Stacking & Storage Cover (6 pcs)
30268988	Stacking & Storage Cover (1 pc)
30045641	Printer, Impact, SF40A
30472063	Auxiliary display, AD7-MD
80850043	Security Device
30269020	Top Loading Kit for Density Determination
30269021	Carrying Case
30269022	In-use Cover



Scout SPX Overload Protection

Model	SPX123	SPX223	SPX222	SPX421	SPX422	SPX621	SPX622	SPX1202	SPX2201	SPX2202	SPX6201	SPX8200
Capacity (g)	120	220		420		620		1200	2200		6200	8200
Readability (g)	0.001		0.01	0.1	0.01	0.1	0.01	0.1	0.01	0.01	0.1	1
Linearity (g)	0.003		0.01	0.1	0.01	0.1	0.02	0.03	0.1	0.03	0.2	1
Stabilization Time (s)	1.5	1.5	1	1	1	1	1	1.5	1	1.5	1	1
Construction	ABS housing and stainless steel pan											
Power Requirement	AC adapter (included) or 4 AA batteries (not included)											
Pan Size (W × D) (mm)	Ø 93		Ø 120			170 × 140		Ø 120		170 × 140		

# Scout® SKX Series



- Space-saving design allows for stackable storage (excluding the 1 mg model).
- Integrated overload protection system rated at ten times the capacity protects the balance in demanding classroom environments.
- Large backlit display improves readability in low light conditions and makes it easier to view results from across a desk or lab bench. Multiple connectivity options for data collection and transfer.



Scout SKX Mole Weighing



Scout SKX Stacking with 6 Balances



Weigh Below Hook



RS232/ USB Interface (Optional)



Battery Power



Density Determination



Mole Weighing



Backlight



Ethernet Interface (Optional)



Scout SKX Density Determination

### Scout Accessories

OHAUS #	Description
30268982	RS232 Interface Kit
30268983	USB Host Interface Kit (for flash drive)
30268984	USB Device Interface Kit (for PC)
30268986	Ethernet Interface Kit
30268987	Stacking & Storage Cover (6 pcs)
30268988	Stacking & Storage Cover (1 pc)
30045641	Printer, Impact, SF40A
30472063	Auxiliary display, AD7-MD
80850043	Security Device
30269020	Top Loading Kit for Density Determination
30269021	Carrying Case
30269022	In-use Cover

Model	SKX123	SKX222	SKX422	SKX622	SKX1202	SKX2202	SKX421	SKX621	SKX2201	SKX6201	SKX8200	STX8200
Capacity (g)	120	220		420		620		1200	2200		6200	8200
Readability (g)	0.001		0.01	0.1	0.01	0.1	0.01		0.1	0.01	0.1	1
Linearity (g)	0.003		0.01	0.1	0.01	0.1	0.02	0.03	0.1	0.03	0.2	1
Stabilization Time (s)	1.5	1	1	1	1.5	1.5	1	1	1	1	1	1
Construction	ABS housing and stainless steel pan											
Power Requirement	AC adapter (included) or 4 AA batteries (not included)											
Pan Size (W × D) (mm)	Ø 93			Ø 120		170 × 140	Ø 120				170 × 140	



# Navigator™ Series

- Navigator offers essential weighing applications at a competitive price point.
- Advanced weighing technology offers one-second stabilization for fast and accurate weighing results, improving operator efficiency, productivity and throughput.
- Overload protection system that can withstand loads up to four times the rated capacity safeguards the balance.



NV Round Pan



NV Square Pan



NVT



Navigator™ Series

Navigator Accessories	
OHAUS #	Description
83032108	USB Interface
83032107	RS232 Interface
83032109	Ethernet Interface
83032106	Rechargeable Battery Kit
30467963	Carrying Case
30467987	Adapter with plugs
30467917	Stacking Kit, ×1, NV
30467918	Stacking Kit, ×4, NV
30045641	Printer, SF40A,

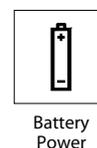
 Parts Counting	 Backlight	 Check-Weighing	 Percent Weighing
 Battery Power	 RS232/ USB Interface (Optional)	 Ethernet Interface (Optional)	

Navigator	NV222	NV422	NV622	NV221	NV 621	NV1201	NV2201	NVT2201	NVT4201	NVT6201	NVT2200	NVT6200	NVT12000	NVT22000	
Capacity (g)	220	420	620	220	620	1200	2200	2200	4200	6200	2200	6200	12000	22000	
Readability (g)	0.01			0.1						1					
Linearity Calibration Mass	100, 200 g	200, 400 g	300, 600 g	100, 200 g	300, 600 g	500 g, 1 kg	1 kg, 2 kg	1 kg, 2 kg	2 kg, 4 kg	3 kg, 6 kg	1 kg, 2 kg	3 kg, 6 kg	5 kg, 10 kg	10 kg, 20 kg	
Stabilization Time(s)	1	1.5		1				1.5		1					
Construction	ABS housing and stainless steel pan														
Power Requirement	AC adapter (included) or 4 C batteries (not included)														
Pan Size (W × D) (mm)	Ø 145			190 × 144						230 × 174					

# Compass™ CX Series



- Alkaline batteries provide up to 1,000 hours of continuous use, making for energy efficient weighing in the workplace, classroom, etc.
- Large backlit display increases readability in low-light conditions and makes it easier to view results from a distance.
- Slim, space-saving design allows for stackable storage for up to four scales.



Model	CX221	CX621	CX1201	CX2200	CX5200
Capacity (g)	220	620	1200	2200	5200
Readability (g)	0.1			1	
Stabilization Time (s)	1.5		2	1.5	
Construction	ABS housing and stainless steel pan				
Power Requirement	3 AA batteries (included) or AC adapter (not included)				
Pan Size (W × D) (mm)	128 × 142				



## Compass™ CR Series

- Intuitive two-button design makes for easy operation.
- Slim, space-saving design allows for stackable storage.
- Enlarged weighing platform can adequately handle large samples and a variety of objects.



Battery Power



Model	CR221	CR621	CR2200	CR5200
Capacity (g)	220	620	2200	5200
Readability (g)	0.1		1	
Stabilization Time (s)	2			
Construction	ABS housing and pan			
Power Requirement	3 AA batteries (included) or AC adapter (not included)			
Pan Size (W × D) (mm)	125 × 132			

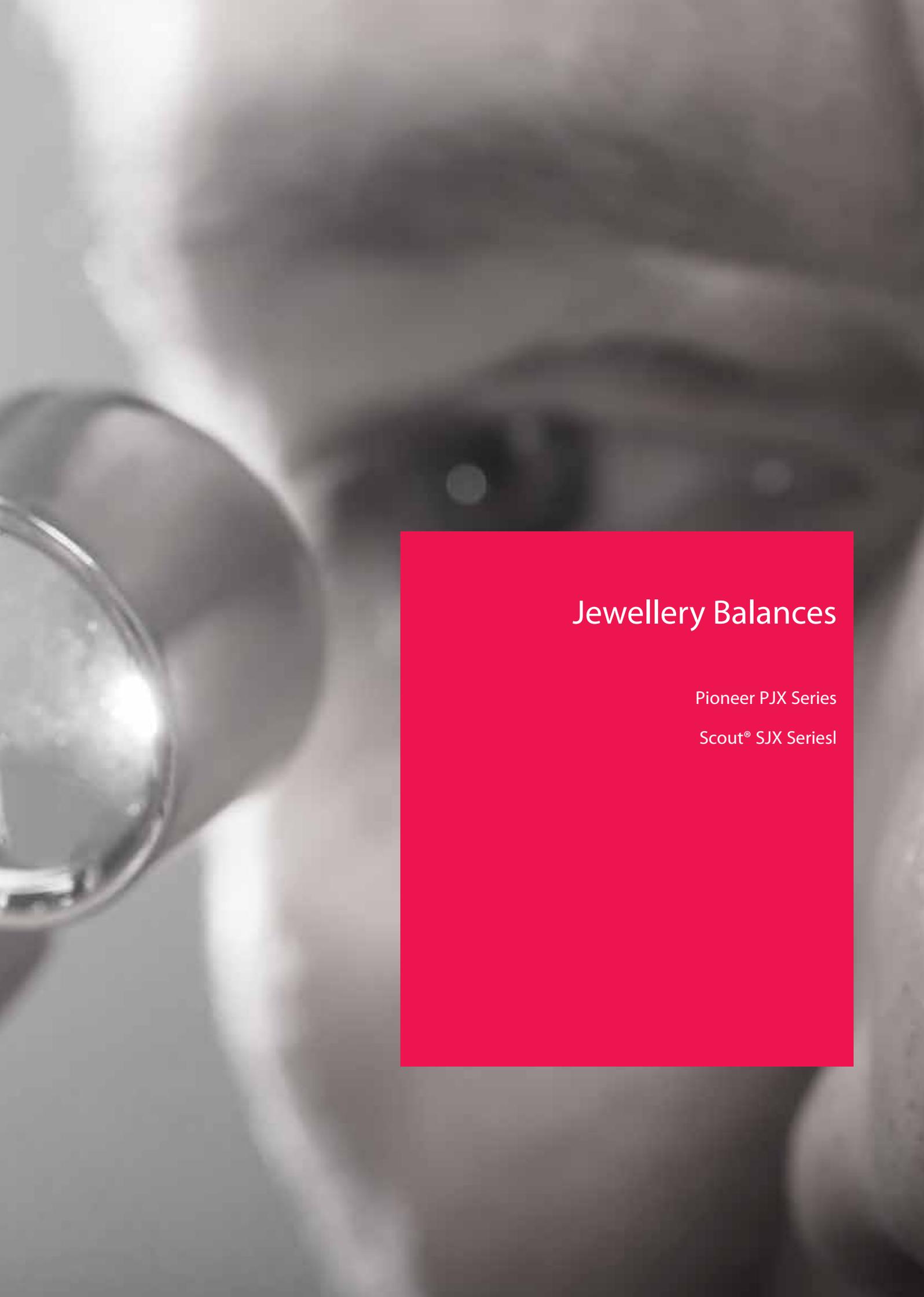
## PS Series



- Sliding pan & cover protects display and keys and prevents load cell damage transport
- Smaller size than most pocket scales allowing a comfortable fit in your pocket
- Fast and easy battery replacement with “pop-out” design

Model	PS121T	PS251T
Capacity (g)	120	250
Readability (g)	0.1	
Construction	ABS housing and pan	
Power	2 lithium batteries (included)	
Pan Size (mm)	Diameter	





# Jewellery Balances

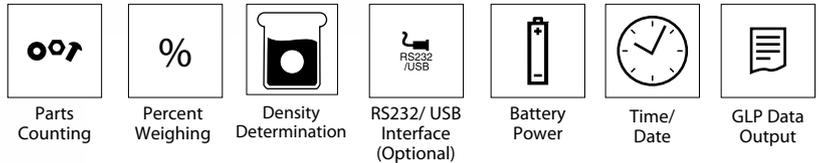
Pioneer PJX Series

Scout® SJX Series

# Pioneer PJX Series



- Backlit LCD and Auxiliary Display Available for Clear Viewing of Weighing Results.
- Compact Modern Design Fits Right on the Workspace.
- Ideal for Legal-for-Trade Applications with OIML Approvals.
- Equipped with Density Determination Mode for Accurate Pricing.



Carat Balances					
InCal™ Model	PJX203	PJX803	PJX1203	PJX1603	PJX2503
ExCal Model	PJX203/E	PJX803/E	PJX1203/E	PJX1603/E	PJX2503/E
Capacity (ct)	200	800	1200	1600	2500
Readability (ct)		0.001			0.005
Capacity (g)	40	160	240	320	500
Readability (g)		0.0001			0.001
Repeatability (STDEV) (g)		0.0001			0.001
Linearity (g)		0.0002			0.002
Stabilization Time (s)		3			2
Sensitivity Temperature Drift (PPM/K)	± 3				
Power Supply	Power Input: 100–240V ~ 200mA 50–60Hz 12–18VA Power Output: 12 VDC 0.5A				
Pan Size (mm)	Ø 90			Ø 120	

Gold Balances									
InCal™ Model	PJX822	PJX1602	PJX2202	PJX3202	PJX4202	PJX5202	PJX2201	PJX4201	PJX6201
ExCal Model	PJX822/E	PJX1602/E	PJX2202/E	PJX3202/E	PJX4202/E	PJX5202/E	PJX2201/E	PJX4201/E	PJX6201/E
Capacity (g)	820	1600	2200	3200	4200	5200	2200	4200	6200
Readability (g)			0.01					0.1	
Repeatability (STDEV) (g)			0.01					0.1	
Linearity (g)			0.02					0.2	
Stabilization Time (s)			1					1	
Sensitivity Temperature Drift (PPM/K)		± 6			± 3		± 6	± 3	± 10
Power Supply	Power Input: 100–240V ~ 200mA 50–60Hz 12–18VA Power Output: 12 VDC 0.5A								
Pan Size (mm)	Ø 180								



# Scout® SJX Series

- Class II Legal-for-Trade compliant balances are suitable for countertop retail applications. An optional auxiliary display can also be installed. Manual internal settings allow for easy calibration.
- Expanded connectivity options including RS232, USB host, USB device, and ethernet allow for convenient data logging and communication.
- Advanced weighing technology ensures reliable, repeatable weighing results.



Scout® SJX Series

Parts Counting	Percent Weighing	Totalization	Weigh Below Hook	Display Hold	RS232/USB Interface (Optional)
Battery Power	Check-Weighing	Peak Hold	Ethernet Interface (Optional)	Internal Calibration	Density Determination



Internal Calibration of SJX

Scout Accessories	
OHAUS #	Description
30268982	RS232 Interface Kit
30268983	USB Host Interface Kit (for flash drive)
30268984	USB Device Interface Kit (for PC)
30268986	Ethernet Interface Kit
30268987	Stacking & Storage Cover (6 pcs)
30268988	Stacking & Storage Cover (1 pc)
30045641	Printer, Impact, SF40A
30472063	Auxiliary display, AD7-MD
80850043	Security Device
30269020	Top Loading Kit for Density Determination
30269021	Carrying Case
30269022	In-use Cover



Scout SJX E with auxiliary display

Model	SJX323	/	SJX622	SJX1502	/	/	SJX6201	/
External Calibration	SJX323/E	SJX322/E	SJX622/E	SJX1502/E	SJX621/E	SJX3201/E	SJX6201/E	SJX8200/E
Capacity (g)	320 ct (64 g)	320 g	620 g	1500 g	620 g	3200 g	6200 g	8200 g
Readability (g)	0.005 ct (0.001 g)		0.01 g				0.1 g	
Linearity (g)	0.003	0.01	0.02	0.03	0.1		0.2	1
Stabilization Time (s)	1.5	1		1.5		1		
Construction	ABS housing & stainless steel pan							
Power Requirement	AC adapter (included) or 4 AA batteries (not included)							
Pan Size (W × D) (mm)	Ø 93	Ø 120				170 × 140		

# Open Air Shakers





## Open Air Shakers

- Light Duty Orbital Shakers
- Extreme Environment Shakers
- Heavy Duty Orbital Shakers
- Rocking & Waving Shakers
- Reciprocating Shakers

# Open Air Shakers Selection Guide

Product Family	Light Duty Orbital Shakers			
Model	SHLD0415AL	SHLD0403DG	SHLD0415DG	SHLDMP03DG
				
Speed Range	40 to 300 rpm	100 to 1200 rpm	40 to 300 rpm	100 to 1200 rpm
Timer	N/A	1 second to 160 hours	1 second to 160 hours	1 second to 160 hours
Motion	Orbital	Orbital	Orbital	Orbital
Orbit	15 mm	3 mm	15 mm	3 mm
Max Weight Capacity	3.6 kg(8 lbs)	3.6 kg(8 lbs)	3.6 kg(8 lbs)	4 microplates / 2 micro-tube racks
Audible Alarm	—	●	●	●
Load Sensor	—	—	—	—
Motor Type	Brushless DC Motor	Brushless DC Motor	Brushless DC Motor	Brushless DC Motor
CO <sub>2</sub> Environment	●	●	●	●
Overload Protection	—	●	●	●
User Calibration (Speed)	—	—	—	—
RS232 Interface	—	—	—	—
Included Tray (L × W)	11.75 × 8.75"	11.75 × 8.75"	11.75 × 8.75"	11 × 7.75"
Tray / Platform Options (L × W)	N/A	Adjustable Platform	Adjustable Platform	N/A

Product Family	Extreme Environment Shakers	Heavy Duty Shaker		
Model	SHEX1619DG	SHHD1619AL	SHHD1619DG	SHHD2325AL
				
Speed Range	15 to 500 rpm	25 to 500 rpm	15 to 500 rpm	25 to 500 rpm
Timer	1 second to 160 hours	1 to 120 minutes	1 second to 160 hours	1 to 120 minutes
Motion	Orbital	Orbital	Orbital	Orbital
Orbit	19 mm	19 mm	19 mm	25 mm
Max Weight Capacity	16 kg(35 lbs)	16 kg(35 lbs)	16 kg(35 lbs)	23 kg(50 lbs)
Audible Alarm	●	—	●	—
Load Sensor	●	—	●	—
Motor Type	Brushless DC Motor	Brushless DC Motor	Brushless DC Motor	Brushless DC Motor
CO <sub>2</sub> Environment	●	●	●	●
Overload Protection	●	—	●	—
User Calibration (Speed)	●	—	●	—
RS232 Interface	●	—	●	—
Included Tray (L × W)	11 × 13"	11 × 13"	11 × 13"	18 × 24"
Tray / Platform Options (L × W)	11 × 13", 13 × 13", 18 × 18", 18 × 24" Adjustable Platform Separatory Funnel Platform	11 × 13", 13 × 13", 18 × 18", 18 × 24" Adjustable Platform Separatory Funnel Platform	11 × 13", 13 × 13", 18 × 18", 18 × 24" Adjustable Platform Separatory Funnel Platform	18 × 24", 18 × 30" Adjustable Platform Large Vessel Carrier Platform

# Open Air Shakers Selection Guide

Product Family	Heavy Duty Orbital Shaker				
Model	SHHD2325DG	SHHD4525DG	SHHD4550DG	SHHD6825DG	SHHD6850DG
					
Speed Range	20 to 500 rpm	15 to 500 rpm	15 to 300 rpm	15 to 500 rpm	15 to 300 rpm
Timer	1 second to 160 hours	1 second to 160 hours			
Motion	Orbital	Orbital	Orbital	Orbital	Orbital
Orbit	25 mm	25 mm	51 mm	25 mm	51 mm
Max Weight Capacity	23 kg(50 lbs)	45 kg(100 lbs)	45 kg(100 lbs)	68 kg(150 lbs)	68 kg(150 lbs)
Audible Alarm	●	●	●	●	●
Load Sensor	●	●	●	●	●
Motor Type	Brushless DC Motor	Brushless DC Motor	Brushless DC Motor	Brushless DC Motor	Brushless DC Motor
CO <sub>2</sub> Environment	●	●	●	●	●
Overload Protection	●	●	●	●	●
User Calibration (Speed)	●	●	●	●	●
RS232 Interface	●	●	●	●	●
Included Tray (L x W)	18 x 24"	24 x 24"	24 x 24"	24 x 36"	24 x 36"
Tray / Platform Options (L x W)	18 x 24", 18 x 30" Adjustable Platform Large Vessel Carrier Platform	24 x 24" Large Vessel Carrier Platform	24 x 24" Large Vessel Carrier Platform	24 x 36" Large Vessel Carrier Platform	24 x 36" Large Vessel Carrier Platform

Product Family	Rocking Shaker		Waving Shaker		Reciprocating Shaker
Model	SHRK04DG	SHRK07AL1	SHWV02DG	SHWV02AL	SHRC0719DG
					
Speed Range	1 to 50 rpm*	1 to 75 rpm*	1 to 30 rpm*	1 to 75 rpm*	20 to 300 rpm
Timer	1 second to 160 hours	1 minute to 120 minutes	1 second to 160 hours	1 minute to 120 minutes	1 second to 160 hours
Motion	Rocking	Rocking	Waving	Waving	Reciprocating
Orbit	Tilt Angle: 0 to 15°	Tilt Angle: 0 to 15°	Tilt Angle: 0 to 20° *	Tilt Angle: 0 to 16°	Stroke: 19 mm
Max Weight Capacity	4.5 kg(10 lbs)**	7.2 kg(16 lbs)**	2.3 kg(5 lbs)**	2.3 kg(5 lbs)**	6.8 kg(15 lbs)
Audible Alarm	●	—	●	—	●
Load Sensor	—	—	—	—	●
Motor Type	Stepper Motor	Stepper Motor	Stepper Motor	Stepper Motor	Brushless DC Motor
CO <sub>2</sub> Environment	●	—	●	—	●
Overload Protection	●	—	●	—	●
User Calibration (Speed)	—	—	—	—	●
RS232 Interface	—	—	—	—	●
Included Tray (L x W)	12.75 x 10"	14 x 11"	11.75 x 8.75"	14 x 11"	11 x 13"
Tray / Platform Options (L x W)	Stacking Tray	Stacking Tray	Stacking Tray	—	11 x 13", 13 x 13", 18 x 18", 18 x 24" Separatory Funnel Platform

● Yes \* Maximum speed/tilt angle may vary with heavy or unbalanced loads. \*\* Centered on tray.

## Light Duty Orbital Shakers



Light Duty Shakers are designed for applications with loads under 3.6kg. Choose from two orbits and speed ranges to optimize your sample mix. Microprocessor-controlled and available as an analog model with basic speed control, two digital models which include a non-slip mat that can be removed to mount flask clamps and tube racks directly onto the tray, and a digital Microplate Shaker model which can hold up to 4 microplates or 2 microtube racks.

- Microprocessor-Controlled for Consistent Shaking Action
- Triple Eccentric Drive Provides Reliable Service and Continuous Duty Operation
- Safety Features Include Speed Ramping and Overload Protection

## Light Duty Orbital Shakers



- Variable speed microprocessor control
- Low profile design
- 15 mm orbit

The OHAUS Light Duty Analog Shaker is an economical shaker designed for educational labs or basic shaking applications.

### Operating Features:

**Low Profile Design:** Takes up less space and easily fits into most hoods and incubators.

**Microprocessor Control:** The variable speed microprocessor control provides consistent uniform shaking action.

**Triple Eccentric Drive:** Permanently lubricated ball bearings and maintenance free, brushless DC motor provide reliable service and continuous duty operation.

**Adjustment Knob:** Basic speed knob with dial settings from 1 to 10.

### Safety Features:

**Speed Ramping Feature:** Slowly increases speed to desired set-point to avoid splashing.

**Spill-Resistant Design:** Channels fluids away from internal components.

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from 0 to 40°C (32 to 104°F), maximum 80% relative humidity, non-condensing.

### Applications:

Blotting techniques, staining/destaining, and general shaking procedures.

### Ordering Information:

Units include a detachable, 3-wire cord and plug. Units are also supplied with an 29.9 × 22.2 cm (11.75 × 8.75") non-skid rubber mat.



Specifications	
Speed Range	40 to 300 rpm
Orbit	15 mm (0.6")
Maximum Weight Capacity	3.6 kg (8 lbs)
Tray Material	Aluminum
Tray Dimensions (L × W)	29.9 × 22.2 cm (11.75 × 8.75")
Overall Dimensions (L × W × H)	41.3 × 254 × 10.2 cm (16.3 × 10.0 × 4.0")
Ship Weight	11.3 kg (25 lbs)

Description	Model	Item Number	County Code
Analog Light Duty Orbital Shaker	SHLD0415AL	30391893	VN, MY, SG, ID, IN
Analog Light Duty Orbital Shaker	SHLD0415AL	30391894	AU, NZ
Analog Light Duty Orbital Shaker	SHLD0415AL	30391896	TH, PH

# Light Duty Orbital Shakers



Triple Eccentric Drive

- General purpose shaker
- LED displays for speed and time
- 3 mm or 15 mm orbit

The OHAUS Digital Light Duty Orbital Shaker is ideal for a wide variety of shaking applications. Tray includes a non-skid rubber mat. Remove the mat to mount a variety of optional flask clamps or test tube racks directly onto the tray.

### Operating Features:

**Low Profile Design:** Takes up less space and easily fits into most hoods and incubators.

**Microprocessor Control:** The variable speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set-point and will restart if power is interrupted.

**Triple Eccentric Drive:** Permanently lubricated ball bearings and maintenance free, brushless DC motor provide reliable service and continuous duty operation.

**LED Display:** Touch pad controls with easy-to-read, independent LED displays for speed and time. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

### Safety Features:

**Overload Protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed Ramping Feature:** Slowly increases speed to desired set-point to avoid splashing.

**Audible Alarm:** In timed mode, alarm will sound when the time reaches zero.

**Spill-Resistant Design:** Channels fluids away from internal components.

### Operating Conditions:

Units can be run in cold rooms, incubators, and CO<sub>2</sub> environments.

SHLD0403DG: -10 to 60°C (14 to 140°F)

SHLD0415DG: -10 to 40°C (14 to 104°F)

Maximum 80% relative humidity, non-condensing.

### Applications:

Cell cultures, immunoassays, and protein studies.

### Ordering Information:

Units include a detachable, 3-wire cord and plug. Units are also supplied with an 29.9 × 22.2 cm (11.75 × 8.75") non-skid rubber mat.

## Specifications

Speed Range	SHLD0403DG SHLD0415DG	100 to 1200 rpm 40 to 300 rpm
Speed Accuracy		+/-2% above 100 rpm +/-2 rpm below 100 rpm
Timer		1 second to 160 hours
Orbit	SHLD0403DG SHLD0415DG	3 mm (0.12") 15 mm (0.6")
Maximum Weight Capacity		3.6 kg (8 lbs)
Tray Material		Aluminum
Tray Dimensions (L × W)		29.9 × 22.2 cm (11.75 × 8.75")
Overall Dimensions (L × W × H)		41.3 × 25.4 × 10.2 cm (16.3 × 10.0 × 4.0")
Ship Weight		11.3 kg (25 lbs)

Description	Model	Item Number	Country Code
Digital Light Duty Orbital Shaker 3 mm Orbit	SHLD0403DG	30391900	VN, MY, SG, ID, IN
Digital Light Duty Orbital Shaker 3 mm Orbit	SHLD0403DG	30391901	AU, NZ
Digital Light Duty Orbital Shaker 3 mm Orbit	SHLD0403DG	30391903	TH, PH
Digital Light Duty Orbital Shaker 15 mm Orbit	SHLD0415DG	30391914	VN, MY, SG, ID, IN
Digital Light Duty Orbital Shaker 15 mm Orbit	SHLD0415DG	30391915	AU, NZ
Digital Light Duty Orbital Shaker 15 mm Orbit	SHLD0415DG	30391917	TH, PH

## Light Duty Orbital Shakers



- Holds up to 4 microplates or 2 micro-tube racks
- Accepts deep well plates
- Timer with audible alarm

The OHAUS Microplate Shaker is ideal for immunoassays and general microplate shaking, and is designed to be used in a variety of environmental conditions.

### Operating Features:

**Low Profile Design:** Takes up less space and easily fits into most hoods and incubators. Base offers durability and added stability.

**Microprocessor Control:** The variable speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set-point and will restart if power is interrupted.

**Triple Eccentric Drive:** Permanently lubricated ball bearings and maintenance free, brushless DC motor provide reliable service and continuous duty operation.

**LED Display:** Touch pad controls with easy-to-read, independent LED displays for speed and time. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

### Safety Features:

**Overload Protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed Ramping Feature:** Slowly increases speed to desired set-point to avoid splashing.

**Audible Alarm:** In timed mode, alarm will sound when the time reaches zero.

**Spill-Resistant Design:** Channels fluids away from internal components.

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), maximum 80% relative humidity, non-condensing.

### Applications:

ELISA assays and DNA studies.

### Ordering Information:

Units include a detachable, 3-wire cord and plug.



### Specifications

Speed Range	100 to 1200 rpm
Speed Accuracy	± 2%
Timer	1 second to 160 hours
Orbit	3 mm (0.12")
Maximum Weight Capacity	4 microplates or 2 micro-tube racks
Tray Material	Aluminum
Tray Dimensions (L x W)	27.9 x 19.7 cm (11 x 7.75")
Overall Dimensions (L x W x H)	41.3 x 25.4 x 10.2 cm (16.3 x 10.0 x 4.0")
Ship Weight	11.3 kg (25 lbs)

Description	Model	Item Number	Country Code
Light Duty Microplate Shaker	SHLDMP03DG	30391907	VN, MY, SG, ID, IN
Light Duty Microplate Shaker	SHLDMP03DG	30391908	AU, NZ
Light Duty Microplate Shaker	SHLDMP03DG	30391910	TH, PH

## Extreme Environment Shakers



Ideal for applications that require CO<sub>2</sub> and humidity for optimal cell growth, our Extreme Environment Shakers are designed for use in extreme environments such as CO<sub>2</sub> incubators. A remote controller (that magnetically attaches to the outside of most incubators) allows for external control of settings, and the shaker base is placed inside of the incubator. Microprocessor control ensures consistent shaking while safely ramping to the set speed.

- Patented Accu-Drive Shaking System Ensures Accuracy and Speed Control
- Control Settings Externally without Disturbing the Incubator Atmosphere
- Touchpad Control With Independent LED Displays for Speed and Time

# Extreme Environment Shakers



- Designed for use in CO<sub>2</sub> Incubators
- Can withstand extreme environments up to 100% humidity
- Remote controller magnetically attaches to most incubators

The OHAUS Extreme Environment Orbital Shaker is designed for a wide range of applications including cell cultures that require CO<sub>2</sub> and humidity for optimal cell growth. The microprocessor control provides consistent uniform shaking while safely ramping to the set speed.

### Operating Features:

**Accu-Drive Shaking System:** The Accu-Drive Shaking System delivers exceptional speed control, accuracy, and durability.

**Microprocessor Control:** The variable speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set-point and will restart if power is interrupted.

**Triple Eccentric Drive:** Permanently lubricated ball bearings and maintenance free, brushless DC motor provide reliable service and continuous duty operation.

**Remote Controller:** The control module is designed to sit outside of the incubator. Settings can be easily viewed or changed from outside of the incubator without disturbing the incubator's atmosphere. The thin ribbon cable is 5.5 feet long and easily passes underneath an incubator door via incubator's utility port. Controller magnetically attaches to most incubator doors or can sit on a lab bench.

**LED Display:** Touch pad controls with easy-to-read, independent LED displays for speed and time. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**RS232 Interface:** Provides two-way communication for data logging and unit control.

**Speed Calibration Mode:** Allows user to automatically recalibrate speed display.

### Safety Features:

**Overload Protection:** Audible and visual signals will activate when system detects an obstruction.

**Speed Ramping Feature:** Slowly increases speed to desired set-point to avoid splashing.

**Audible Alarm:** In timed mode, alarm will sound when the time reaches zero. Alarm has optional mute function which can be set from the touch pad control.

**Spill-Resistant Design:** Channels fluids away from internal components.

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), up to 100% humidity.

### Applications:

Cell cultures, solubility studies, and extraction procedures.

### Ordering Information:

Unit includes a detachable, 3-wire cord and plug. Unit is also supplied with an 27.9 × 33 cm (11 × 13") non-skid rubber mat.



The remote controller can be attached to the incubator housing with a built-in magnet.

Specifications		
Speed Range	15 to 500 rpm	
Speed Accuracy	above 100 rpm ± 1% of set speed below 100 rpm ± 1 rpm	
Timer	1 second to 160 hours	
Orbit	19 mm (0.75")	
Maximum Weight Capacity	16 kg (35 lbs)	
Tray Material	Aluminum	
Tray Dimensions (L × W)	27.9 × 33 cm (11 × 13")	
Overall Dimensions (L × W × H)	Shaker	29.4 × 35.5 × 14.9 cm (11.6 × 14.0 × 5.9")
	Remote	15.0 × 35.6 × 11.2 cm (5.5 × 14.0 × 4.4")
Ship Weight	22.2 kg (49 lbs)	

Description	Model	Item Number	Country Code
Extreme Environment Shaker	SHEX1619DG	30391816	VN, MY, SG, ID, IN
Extreme Environment Shaker	SHEX1619DG	30391817	AU, NZ
Extreme Environment Shaker	SHEX1619DG	30391819	TH, PH

## Heavy Duty Orbital Shakers



With load capacities from 16 to 68 kg and over 70 accessory options, OHAUS Heavy Duty Shakers are designed to handle a range of applications. Available as analog or digital models with microprocessor control to provide variable speed and consistent shaking, while ramping to the set speed. Microprocessor displays the last set-point and will restart if power is interrupted. Built-in tray and non-slip rubber mat included with all models.

- Patented Accu-Drive Shaking System Ensures Accuracy and Speed Control
- Touchpad Control With Independent LED Displays for Speed/Time on Digital Models
- Safety Features Include Speed Ramping and Load Sensor

# Heavy Duty Orbital Shakers



- Microprocessor controls
- Continuous or timed operation
- 16 kg weight capacity

The OHAUS 16 kg Capacity Analog Heavy Duty Orbital Shaker is designed for a wide range of applications that require basic shaking control. Shaker provides reproducible motion that is evenly distributed throughout the entire surface of the tray.

### Operating Features:

**Microprocessor Control:** The variable speed microprocessor control provides consistent uniform shaking action. The shaker will automatically restart after a power interruption.

**Triple Eccentric Drive:** Permanently lubricated ball bearings and maintenance free, brushless DC motor provide reliable service and continuous duty operation.

**Adjustment Knobs:** Basic speed and time knobs with dial settings from 1 to 10.

### Safety Features:

**Speed Ramping Feature:** Slowly increases speed to desired set-point to avoid splashing.

**Spill-Resistant Design:** Channels fluids away from internal components.

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from 0 to 40°C (32 to 104°F), maximum 80% relative humidity, non-condensing.

### Applications:

Bacterial suspensions, staining/destaining, and general mixing.

### Ordering Information:

Unit includes a detachable, 3-wire cord and plug. Unit is also supplied with an 27.9 × 33 cm (11 × 13") non-skid rubber mat.



### Specifications

Speed Range	25 to 500 rpm
Timer	1 minute to 120 minutes
Orbit	19 mm (0.75")
Maximum Weight Capacity	16 kg (35 lbs)
Tray Material	Aluminum
Tray Dimensions (L × W)	27.9 × 33 cm (11 × 13")
Overall Dimensions (L × W × H)	41.3 × 35.5 × 14.9 cm (16.3 × 14.0 × 5.9")
Ship Weight	22.2 kg (49 lbs)

Description	Model	Item Number	Country Code
16 kg Capacity Analog Heavy Duty Orbital Shaker	SHHD1619AL	30391802	VN, MY, SG, ID, IN
16 kg Capacity Analog Heavy Duty Orbital Shaker	SHHD1619AL	30391803	AU, NZ
16 kg Capacity Analog Heavy Duty Orbital Shaker	SHHD1619AL	30391805	TH, PH

# Heavy Duty Orbital Shakers



- Exceptional speed control, accuracy and durability
- LED displays for speed and time
- Calibration mode for speed

The OHAUS 16 kg Capacity Digital Heavy Duty Orbital Shaker is designed for a wide range of applications, including cell cultures, that require accurate and repeatable results. The microprocessor control provides consistent uniform shaking while safely ramping to the set speed.

### Operating Features:

**Accu-Drive Shaking System:** The exclusive patented Accu-Drive Shaking System delivers exceptional speed control, accuracy, and durability. The shaking system continuously monitors shaking speed and maintains set-point, even under changing loads. When unit is set to a speed above 100 rpm, the speed accuracy is  $\pm 1\%$  of set speed. When set under 100 rpm, speed accuracy is  $\pm 1$  rpm.

**Microprocessor Control:** The variable speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set-point and will restart if power is interrupted.

**Triple Eccentric Drive:** Permanently lubricated ball bearings and maintenance free, brushless DC motor provide reliable service and continuous duty operation.

**LED Display:** Touch pad controls with easy-to-read, independent LED displays for speed and time allow operator to view both settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**RS232 Interface:** Provides two-way communication for data logging and unit control.

**Speed Calibration Mode:** Allows user to automatically recalibrate speed display.

### Safety Features:

**Load Sensor:** A built-in load sensor detects unbalanced conditions and automatically reduces rpm to a safe speed to protect samples.

**Overload Protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed Ramping Feature:** Slowly increases speed to desired set-point to avoid splashing.

**Audible Alarm:** In timed mode, alarm will sound when the time reaches zero. Alarm has optional mute function which can be set from the touch pad control.

**Spill-Resistant Design:** Channels fluids away from internal components.

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), maximum 80% relative humidity, non-condensing.

### Applications:

Cell cultures, solubility studies, and extraction procedures.

### Ordering Information:

Unit includes a detachable, 3-wire cord and plug. Unit is also supplied with an 27.9 × 33 cm (11 × 13") non-skid rubber mat.

### Specifications

Speed Range	15 to 500 rpm
Speed Accuracy	above 100 rpm $\pm 1\%$ of set speed below 100 rpm $\pm 1$ rpm
Timer	1 second to 160 hours
Orbit	19 mm (0.75") orbit
Maximum Weight Capacity	16 kg (35 lbs)
Tray Material	Aluminum
Tray Dimensions (L × W)	27.9 × 33 cm (11 × 13")
Overall Dimensions (L × W × H)	41.3 × 35.5 × 14.9 cm (16.3 × 14.0 × 5.9")
Ship Weight	22.2 kg (49 lbs)

Description	Model	Item Number	Country Code
16 kg Capacity Digital Heavy Duty Orbital	SHHD1619DG	30391811	VN, MY, SG, ID, IN
16 kg Capacity Digital Heavy Duty Orbital	SHHD1619DG	30391812	AU, NZ
16 kg Capacity Digital Heavy Duty Orbital	SHHD1619DG	30391814	TH, PH

# Heavy Duty Orbital Shakers



- Microprocessor controls
- Continuous or timed operation
- 23 kg weight capacity

The OHAUS Analog 23 kg Capacity Heavy Duty Orbital Shaker is designed for applications with heavy duty loads. Shaker provides reproducible motion that is evenly distributed throughout the entire surface of the tray.

### Operating Features:

**Microprocessor Control:** The variable speed microprocessor control provides consistent uniform shaking action. The shaker will automatically restart after a power interruption.

**Triple Eccentric Drive:** Permanently lubricated ball bearings and maintenance free, brushless DC motor provide reliable service and continuous duty operation.

**Adjustment Knobs:** Basic speed and time knobs with dial settings from 1 to 10.

### Safety Features:

**Speed Ramping Feature:** Slowly increases speed to desired set-point to avoid splashing.

**Spill-Resistant Design:** Channels fluids away from internal components.

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from 0 to 40°C (32 to 104°F), maximum 80% relative humidity, non-condensing.

### Applications:

Bacterial suspensions, staining/destaining, and general mixing.

### Ordering Information:

Units include a 3-wire cord and plug. Units are also supplied with an 45.7 × 61 cm (18 × 24") non-skid rubber mat.



### Specifications

Speed Range	25 to 500 rpm
Timer	1 minute to 120 minutes
Orbit	25 mm (1")
Maximum Weight Capacity	22.7 kg (50 lbs)
Tray Material	Aluminum
Tray Dimensions	45.7 × 61 cm (18 × 24")
Overall Dimensions (L × W × H)	61.0 × 67.8 × 14.9 cm (24.0 × 26.7 × 5.9")
Ship Weight	49.5 kg (109 lbs)

Description	Model	Item Number	Country Code
Analog 23 kg Capacity Heavy Duty Orbital Shaker	SHHD2325AL	30391837	VN, MY, SG, ID, IN
Analog 23 kg Capacity Heavy Duty Orbital Shaker	SHHD2325AL	30391838	AU, NZ
Analog 23 kg Capacity Heavy Duty Orbital Shaker	SHHD2325AL	30391840	TH, PH

# Heavy Duty Orbital Shakers



- Patented Accu-Drive Shaking System
- LED displays for speed and time
- 23 kg weight capacity

The OHAUS Digital 23 kg Capacity Heavy Duty Orbital Shaker is designed for a wide range of applications with larger or heavier loads that require accurate and repeatable results.

### Operating Features:

**Accu-Drive Shaking System:** The exclusive patented Accu-Drive Shaking System delivers exceptional speed control, accuracy, and durability. The shaking system continuously monitors shaking speed and maintains set-point, even under changing loads. When unit is set to a speed above 100 rpm, the speed accuracy is  $\pm 1\%$  of set speed. When set under 100 rpm, speed accuracy is  $\pm 1$  rpm.

**Microprocessor Control:** The variable speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set-point and will restart if power is interrupted.

**Triple Eccentric Drive:** Permanently lubricated ball bearings and maintenance free, brushless DC motor provide reliable service and continuous duty operation.

**LED Display:** Touch pad controls with easy-to-read, independent LED displays for speed and time allow operator to view both settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**RS232 Interface:** Provides two-way communication for data logging and unit control.

**Speed Calibration Mode:** Allows user to automatically recalibrate speed display.

### Safety Features:

**Load Sensor:** A built-in load sensor detects unbalanced conditions and automatically reduces rpm to a safe speed to protect samples.

**Overload Protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed Ramping Feature:** Slowly increases speed to desired set-point to avoid splashing.

**Audible Alarm:** In timed mode, alarm will sound when the time reaches zero. Alarm has optional mute function which can be set from the touch pad control.

**Spill-Resistant Design:** Channels fluids away from internal components.

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), maximum 80% relative humidity, non-condensing.

### Applications:

Cell cultures, solubility studies, and extraction procedures.

### Ordering Information:

Units include a detachable, 3-wire cord and plug. Units are also supplied with an 45.7 × 61 cm (18 × 24") non-skid rubber mat.

Specifications	
Speed Range	20 to 500 rpm
Speed Accuracy	above 100 rpm $\pm 1\%$ of set speed below 100 rpm $\pm 1$ rpm
Timer	1 second to 160 hours
Orbit	25 mm (1")
Maximum Weight Capacity	22.7 kg (50 lbs)
Tray Material	Aluminum
Tray Dimensions	45.7 × 61 cm (18 × 24")
Overall Dimensions (L × W × H)	61.0 × 67.8 × 14.9 cm (24.0 × 26.7 × 5.9")
Ship Weight	49.5 kg (109 lbs)

Description	Model	Item Number	Country Code
Digital 23 kg Capacity Heavy Duty Orbital Shaker	SHHD2325DG	30391844	VN, MY, SG, ID, IN
Digital 23 kg Capacity Heavy Duty Orbital Shaker	SHHD2325DG	30391845	AU, NZ
Digital 23 kg Capacity Heavy Duty Orbital Shaker	SHHD2325DG	30391847	TH, PH

# Heavy Duty Orbital Shakers



- Patented Accu-Drive Shaking System
- 45 kg weight capacity
- Available with either 25mm or 51 mm orbit

The OHAUS Digital 45 kg Capacity Orbital Shaker is a large capacity shaker. They have a more powerful drive mechanism and larger orbits for optimal shaking of large vessels.

## Operating Features:

**Accu-Drive Shaking System:** The exclusive patented Shaking System delivers exceptional speed control, accuracy, and durability. The shaking system continuously monitors shaking speed and maintains set-point, even under changing loads. When unit is set to a speed above 100 rpm, the speed accuracy is  $\pm 1\%$  of set speed. When set under 100 rpm, speed accuracy is  $\pm 1$  rpm.

**Microprocessor Control:** The variable speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set-point and will restart if power is interrupted.

**Triple Eccentric Drive:** Permanently lubricated ball bearings and maintenance free, brushless DC motor provide reliable service and continuous duty operation.

**LED Display:** Touch pad controls with easy-to-read, independent LED displays for speed and time allow operator to view both settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**RS232 Interface:** Provides two-way communication for data logging and unit control.

**Speed Calibration Mode:** Allows user to automatically recalibrate speed display.

## Safety Features:

**Load Sensor:** A built-in load sensor detects unbalanced conditions and automatically reduces rpm to a safe speed to protect samples.

**Overload Protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed Ramping Feature:** Slowly increases speed to desired set-point to avoid splashing.

**Audible Alarm:** In timed mode, alarm will sound when the time reaches zero. Alarm has optional mute function which can be set from the touch pad control.

**Spill-Resistant Design:** Channels fluids away from internal components.

## Operating Conditions:

Units can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), maximum 80% relative humidity, non-condensing.

## Applications:

Cell cultures, solubility studies, and extraction procedures.

## Ordering Information:

Units include a detachable, 3-wire cord and plug. Units are also supplied with a 61 × 61 cm (24 × 24") non-skid rubber mat.



## Specifications

Speed Range	SHHD4525DG	15 to 500 rpm
	SHHD4550DG	15 to 300 rpm
Speed Accuracy		above 100 rpm $\pm 1\%$ of set speed below 100 rpm $\pm 1$ rpm
Timer		1 second to 160 hours
Orbit	SHHD4525DG	25 mm (1")
	SHHD4550DG	51 mm (2")
Maximum Weight Capacity		45.4 kg (100 lbs)
Tray Material		Aluminum
Tray Dimensions (L × W)		61 × 61 cm (24 × 24")
Overall Dimensions (L × W × H)		72.9 × 67.8 × 17.0 cm (28.7 × 26.7 × 6.7")
Ship Weight		90.8 kg (200 lbs)

Description	Model	Item Number	Country Code
Digital 45 kg Capacity Heavy Duty Orbital Shaker 1" Orbit	SHHD4525DG	30391865	VN, MY, SG, ID, IN
Digital 45 kg Capacity Heavy Duty Orbital Shaker 1" Orbit	SHHD4525DG	30391866	AU, NZ
Digital 45 kg Capacity Heavy Duty Orbital Shaker 1" Orbit	SHHD4525DG	30391868	TH, PH
Digital 45 kg Capacity Heavy Duty Orbital Shaker 2" Orbit	SHHD4550DG	30391872	VN, MY, SG, ID, IN
Digital 45 kg Capacity Heavy Duty Orbital Shaker 2" Orbit	SHHD4550DG	30391873	AU, NZ
Digital 45 kg Capacity Heavy Duty Orbital Shaker 2" Orbit	SHHD4550DG	30391875	TH, PH

# Heavy Duty Orbital Shakers



- Patented Accu-Drive Shaking System
- Available with either 25mm or 51mm orbit
- Calibration mode for speed

The OHAUS Digital 68 kg Capacity Orbital Shakers is the largest capacity shakers designed for the heaviest of loads. They have the most powerful drive mechanism of all the shakers and large orbits for optimal shaking of larger vessels.

### Operating Features:

**Accu-Drive Shaking System:** The exclusive patented Accu-Drive Shaking System delivers exceptional speed control, accuracy, and durability. The system continuously monitors shaking speed and maintains set-point, even under changing loads. When unit is set to a speed above 100 rpm, the speed accuracy is  $\pm 1\%$  of set speed. When set under 100 rpm, speed accuracy is  $\pm 1$  rpm.

**Microprocessor Control:** The variable speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set-point and will restart if power is interrupted.

**Triple Eccentric Drive:** Permanently lubricated ball bearings and maintenance free, brushless DC motor provide reliable service and continuous duty operation.

**LED Display:** Touch pad controls with easy-to-read, independent LED displays for speed and time allow operator to view both settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**RS232 Interface:** Provides two-way communication for data logging and unit control.

**Speed Calibration Mode:** Allows user to automatically recalibrate speed display.

### Safety Features:

**Load Sensor:** A built-in load sensor detects unbalanced conditions and automatically reduces rpm to a safe speed to protect samples.

**Overload Protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed Ramping Feature:** Slowly increases speed to desired set-point to avoid splashing.

**Audible Alarm:** In timed mode, alarm will sound when the time reaches zero. Alarm has optional mute function which can be set from the touch pad control.

**Spill-Resistant Design:** Channels fluids away from internal components.

### Operating Conditions:

Units can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), maximum 80% relative humidity, non-condensing.

### Applications:

Cell cultures, solubility studies, and extraction procedures.

### Ordering Information:

Units include a detachable, 3-wire cord and plug. Units are also supplied with a 61 × 91 cm (24 × 36") non-skid rubber mat.

### Specifications

Speed Range	SHHD6825DG	15 to 500 rpm
	SHHD6850DG	15 to 300 rpm
Speed Accuracy		above 100 rpm $\pm 1\%$ of set speed below 100 rpm $\pm 1$ rpm
Timer		1 second to 160 hours
Orbit	SHHD6825DG	25 mm (1")
	SHHD6850DG	51 mm (2")
Maximum Weight Capacity		68 kg (150 lbs)
Tray Material		Aluminum
Tray Dimensions (L × W)		61 × 91 cm (24 × 36")
Overall Dimensions (L × W × H)		74.4 × 91.4 × 17.0 cm (29.3 × 36.0 × 6.7")
Ship Weight		104.4 kg (230 lbs)

Description	Model	Item Number	Country Code
Digital 68 kg Capacity Heavy Duty Orbital Shaker 1" Orbit	SHHD6825DG	30391879	VN, MY, SG, ID, IN
Digital 68 kg Capacity Heavy Duty Orbital Shaker 1" Orbit	SHHD6825DG	30391880	AU, NZ
Digital 68 kg Capacity Heavy Duty Orbital Shaker 1" Orbit	SHHD6825DG	30391882	TH, PH
Digital 68 kg Capacity Heavy Duty Orbital Shaker 2" Orbit	SHHD6850DG	30391886	VN, MY, SG, ID, IN
Digital 68 kg Capacity Heavy Duty Orbital Shaker 2" Orbit	SHHD6850DG	30391887	AU, NZ
Digital 68 kg Capacity Heavy Duty Orbital Shaker 2" Orbit	SHHD6850DG	30391889	TH, PH



## Rocking & Waving Shakers



OHAUS Rocking and Waving Shakers are designed for use in a range of lab applications in a variety of environmental conditions. Rocking Shakers provide a seesaw-like motion, while Waving Shakers offer a smooth, low-foaming, 3D wave motion for precise speed control. Available in microprocessor-controlled digital models and more economical analog models. All models include a non-slip mat, and most models are available with a stacking tray option.

- Microprocessor Control Provides Precise Control
- Tilt angle and speed adjustments can be made while unit is running
- Safety Features Include Speed Ramping and Overload Protection

# Rocking & Waving Shakers



- Variable control for speed, tilt and time
- 7.3 kg capacity
- Two-tier model doubles workable capacity

The OHAUS Analog Rocking Shaker is an easy and economical option for all of your rocking needs. The Rocking Shaker is ideal for cell culture and blotting applications and is designed to be used in a variety of environmental conditions. Rocker is supplied with an 35.6 × 27.9 cm (14 × 11") non-skid rubber mat.

### Operating Features:

**Low Profile Design:** Takes up less bench space and fits into most hoods and incubators. Two-tier option increases the capacity with the same footprint and provides a 3.5" (8.9 cm) clearance between platforms. Cast aluminum base offers durability and added stability

**Microprocessor Control:** The microprocessor control provides tilt adjustment which allows user to easily adjust rocking angle from 0 to 15° while unit is operating. Smooth speed control with low speed rocking motion.

**Independent Control Knobs:** Independent control knobs for speed, tilt, and time, allow for easy adjustments.

### Safety Features:

**Overload Protection:** Audible signal will activate when system detects an obstruction or overload of the tray.

**Speed Ramping Feature:** Slowly increases speed to desired set-point to avoid splashing.

**Timer:** Timer will automatically stop rocking motion when timer reaches zero.

**Spill-Resistant Design:** Channels fluids away from internal components.

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), maximum 80% relative humidity, non-condensing.

### Applications:

Staining and destaining gels, hybridization procedures, hematology, and blotting techniques.

### Ordering Information:

Units include a detachable, 3-wire cord and plug. Units are also supplied with a 35.6 × 27.9 cm (14 × 11") non-skid rubber mat. Two-tier models include a 2<sup>nd</sup> tray, non-skid mat and hardware.

### Specifications

Speed Range	1 to 75 rpm*	
Tilt Angle	0 to 15°**	
Timer	1 minute to 120 minutes	
Maximum Weight Capacity	7.3 kg (16 lbs)**	
Tray Material	Aluminum	
Tray Dimensions (L × W)	35.6 × 27.9 cm (14 × 11")	
Overall Dimensions (L × W × H)	1 Tier	42.5 27.9 14.0 cm (16.8 × 11.0 × 5.5")
	2 Tier	42.5 × 27.9 × 24.1 cm (16.8 × 11.0 × 9.5")
Ship Weight	7 kg (15.5 lbs)	

\* Maximum speed/tilt angle may vary with heavy or unbalanced loads.

\*\* Centered on tray.

Description	Model	Item Number	Country Code
Analog Rocking Shaker 1 Tier	SHRK07AL1	30391954	VN, MY, SG, ID, IN
Analog Rocking Shaker 1 Tier	SHRK07AL1	30391955	AU, NZ
Analog Rocking Shaker 1 Tier	SHRK07AL1	30391957	TH, PH
Analog Rocking Shaker 2 Tier	SHRK07AL2	30391961	VN, MY, SG, ID, IN
Analog Rocking Shaker 2 Tier	SHRK07AL2	30391962	AU, NZ
Analog Rocking Shaker 2 Tier	SHRK07AL2	30391964	TH, PH

## Rocking & Waving Shakers



- Electronic tilt adjustment from 0 to 15° while unit is operating
- Displays for speed, tilt angle and time
- Timer with audible alarm

The OHAUS Digital Rocking Shaker is ideal for cell culture work and is designed to be used in a variety of environmental conditions.

### Operating Features:

**Low Profile Design:** Takes up less space and easily fits into most hoods and incubators. Cast aluminum base offers durability and added stability.

**Microprocessor Control:** The microprocessor control provides electronic tilt angle adjustment which allows user to easily adjust rocking angle from 0 to 15° while unit is operating. Precise speed control provides smooth, low-speed rocking motion down to 1 rpm.

**LED Display:** Touch pad controls with easy-to-read, independent LED displays for speed and tilt angle, and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

### Safety Features:

**Overload Protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed Ramping Feature:** Slowly increases speed to desired set-point to avoid splashing.

**Audible Alarm:** In timed mode, alarm will sound when the time reaches zero.

**Spill-Resistant Design:** Channels fluids away from internal components.

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), maximum 80% relative humidity, non-condensing.

### Applications:

Staining and destaining gels, hybridization procedures, hematology, and blotting techniques.

### Ordering Information:

Units include a detachable, 3-wire cord and plug. Units are also supplied with a 32.4 × 25.4 cm (12.75 × 10") non-skid rubber mat.



### Specifications

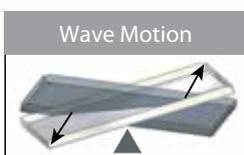
Speed Range	1 to 50 rpm*
Speed Accuracy	± 1 rpm
Tilt Angle	0 to 15°*
Timer	1 second to 160 hours
Maximum Weight Capacity	4.5 kg (10 lbs)**
Tray Material	Aluminum
Tray Dimensions (L × W)	32.4 × 25.4 cm (12.75 × 10")
Overall Dimensions (L × W × H)	42.5 × 25.4 × 14.0 cm (16.8 × 10.0 × 5.5")
Ship Weight	7 kg (15.5 lbs)

\* Maximum speed/tilt angle may vary with heavy or unbalanced loads.

\*\* Centered on tray.

Description	Model	Item Number	Country Code
Digital Rocking Shaker 1 Tier	SHRK04DG	30391989	VN, MY, SG, ID, IN
Digital Rocking Shaker 1 Tier	SHRK04DG	30391990	AU, NZ
Digital Rocking Shaker 1 Tier	SHRK04DG	30391992	TH, PH

# Rocking & Waving Shakers



- Variable control for speed, tilt and time
- 2.3 kg capacity
- Large 36 × 28 cm Tray

The OHAUS Analog Waving Shakers are an easy and economical option for all of your waving needs. Ideal for cell culture and blotting applications, and is designed to be used in a variety of environmental conditions.

### Operating Features:

**Low Profile Design:** Takes up less space and easily fits into most hoods and incubators. Cast aluminum base offers durability and added stability.

**Microprocessor Control:** Provides tilt adjustment which allows user to easily adjust waving angle from 0 to 16° while unit is operating. Smooth speed control with low speed waving motion.

**Independent Control Knobs:** Independent control knobs for speed, tilt and time allow for easy adjustments.

### Safety Features:

**Overload Protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed Ramping Feature:** Slowly increases speed to desired set-point to avoid splashing.

**Timer:** Timer, if engaged, will automatically stop waving motion when timer reaches zero.

**Spill-Resistant Design:** Channels fluids away from internal components.

### Operating Conditions:

Unit can be run in cold rooms, incubators, and environments from -10 to 60°C (14 to 140°F), maximum 80% relative humidity, non-condensing.

### Applications:

Staining and destaining gels, hybridization procedures, hematology, and blotting techniques.

### Ordering Information:

Units include a detachable, 3-wire cord and plug. Units are also supplied with a 35.6 × 27.9 cm (14 × 11") non-skid rubber mat.

### Specifications

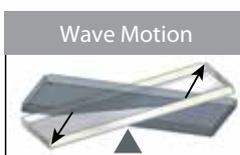
Speed Range	1 to 75 rpm*
Tilt Angle	0 to 16°**
Timer	1 minute to 120 minutes
Maximum Weight Capacity	2.3 kg (5 lbs)**
Tray Material	Aluminum
Tray Dimensions (L × W)	35.6 × 27.9 cm (14 × 11")
Overall Dimensions (L × W × H)	42.5 × 27.9 × 16.5 cm (16.8 × 11 × 6.5")
Ship Weight	7 kg (15.5 lbs)

\* Maximum speed/tilt angle may vary with heavy or unbalanced loads.

\*\* Centered on tray.

Description	Model	Item Number	Country Code
Analog Waving Shaker	SHWV02AL	30391968	VN, MY, SG, ID, IN
Analog Waving Shaker	SHWV02AL	30391969	AU, NZ
Analog Waving Shaker	SHWV02AL	30391971	TH, PH

## Rocking & Waving Shakers



- Electronic tilt adjustment from 0 to 20° while unit is operating
- Displays for speed and tilt angle, and time
- Timer with audible alarm

The OHAUS Digital Waving Shaker provides precise speed control and a smooth, low foaming, three dimensional, "wave" motion. Ideal for use in a wide range of laboratory applications and designed to be used in a variety of environmental conditions. Tray includes a non-skid rubber mat that is suitable for holding Petri dishes.

### Operating Features:

**Low Profile Design:** Takes up less space and easily fits into most hoods and incubators. Cast aluminum base offers durability and added stability.

**Microprocessor Control:** The microprocessor control provides electronic tilt angle adjustment which allows user to easily adjust waving angle from 0 to 20° while unit is operating. Precise speed control provides smooth, low-speed waving motion down to 1 rpm.

**LED Display:** Touch pad controls with easy-to-read, independent LED displays for speed and tilt angle, and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last settings, even after power has been turned off.

### Safety Features:

**Overload Protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed Ramping Feature:** Slowly increases speed to desired set-point to avoid splashing.

**Audible Alarm:** In timed mode, alarm will sound when the time reaches zero.

**Spill-Resistant Design:** Channels fluids away from internal components.

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), maximum 80% relative humidity, non-condensing.

### Applications:

Blood samples, DNA extractions, blotting techniques, and general mixing of various size tubes.

### Ordering Information:

Units include a detachable, 3-wire cord and plug. Units are also supplied with an 29.9 × 22.2 cm (11.75 × 8.75") non-skid rubber mat.

Specifications	
Speed Range	1 to 30 rpm*
Speed Accuracy	± 1 rpm
Tilt Angle	0 to 20°*
Timer	1 second to 160 hours
Maximum Weight Capacity	2.3 kg (5 lbs)**
Tray Material	Aluminum
Tray Dimensions (L × W)	29.9 × 22.2 cm (11.75 × 8.75")
Overall Dimensions (L × W × H)	41.3 × 25.4 × 16.5 cm (16.3 × 10.0 × 6.5")
Ship Weight	7.3 kg (16 lbs)

\* Maximum speed/tilt angle may vary with heavy or unbalanced loads.  
 \*\* Centered on tray.

Description	Model	Item Number	Country Code
Digital Waving Shaker	SHWV02DG	30391949	VN, MY, SG, ID, IN
Digital Waving Shaker	SHWV02DG	30391950	AU, NZ
Digital Waving Shaker	SHWV02DG	30391952	TH, PH

## Reciprocating



OHAUS Reciprocating Shakers are designed for a range of applications including cell cultures and extraction procedures that require accurate, repeatable results. Our shakers are microprocessor-controlled to provide consistent, uniform shaking action. The back-and-forth reciprocating motion has a 19 mm stroke length. Permanently lubricated ball bearings & maintenance-free, brushless DC motor provide reliable service and continuous duty operation.

- Touchpad Control With Independent LED Displays for Speed and Time
- Safety Features Include Speed Ramping and Load Sensor
- Overload Protection System Detects Obstructions and Tray Overloading

# Reciprocating



- Exceptional speed control, accuracy and durability
- LED displays for speed and time
- Calibration mode for speed

The OHAUS Digital Reciprocating Shakers are designed for a wide range of applications, including cell cultures, that require accurate and repeatable results. The microprocessor control provides consistent uniform shaking while safely ramping to the set speed.

### Operating Features:

The shaking system in both models continuously monitors shaking speed and maintains set-point, even under changing loads. When unit is set to a speed above 100 rpm, the speed accuracy is  $\pm 1\%$  of set speed. When set under 100 rpm, speed accuracy is  $\pm 1$  rpm.

**Microprocessor Control:** The variable speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set-point and will restart if power is interrupted.

**Single Eccentric Drive:** Permanently lubricated ball bearings and maintenance free, brushless DC motor provide reliable service and continuous duty operation. **LED Display:** Touch pad controls with easy-to-read, independent LED displays for speed and time allow operator to view both settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**RS232 Interface:** Provides two-way communication for data logging and unit control.

**Speed Calibration Mode:** Allows user to automatically recalibrate speed display.

### Safety Features:

**Load Sensor:** A built-in load sensor detects unbalanced conditions and automatically reduces rpm to a safe speed to protect samples.

**Overload Protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed Ramping Feature:** Slowly increases speed to desired set-point to avoid splashing.

**Audible Alarm:** In timed mode, alarm will sound when the time reaches zero. Alarm has optional mute function which can be set from the touch pad control.

**Spill-Resistant Design:** Channels fluids away from internal components.

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), maximum 80% relative humidity, non-condensing.

### Applications:

Cell cultures, solubility studies, and extraction procedures.

### Ordering Information:

Unit includes a detachable, 3-wire cord and plug. Unit is also supplied with an 27.9 × 33 cm (11 × 13") non-skid rubber mat.



### Specifications

Speed Range	20 to 300 rpm
Speed Accuracy	above 100 rpm $\pm 1\%$ of set speed below 100 rpm $\pm 1$ rpm
Timer	1 second to 160 hours
Stroke	19 mm (0.75")
Maximum Weight Capacity	6.8 kg (15 lbs)
Tray Material	Aluminum
Tray Dimensions (L × W)	27.9 × 33 cm (11 × 13")
Overall Dimensions (L × W × H)	41.3 × 35.5 × 14.6 cm (16.3 × 14.0 × 5.8")
Ship Weight	22.2 kg (49 lbs)

Description	Model	Item Number	Country Code
Digital Reciprocating Shaker	SHRC0719DG	30391830	VN, MY, SG, ID, IN
Digital Reciprocating Shaker	SHRC0719DG	30391831	AU, NZ
Digital Reciprocating Shaker	SHRC0719DG	30391833	TH, PH

# Incubating & Incubating Cooling Shakers





## Incubating & Incubating Cooling Shakers

Incubating Cooling Thermal Shakers  
Incubating Light Duty Orbital Shakers  
Incubating Cooling Orbital Shakers  
Incubating Rocking & Waving Shakers

# Incubating & Incubating Cooling Selection Guide

Product Family	Incubating Cooling Thermal Shakers	Incubating Light Duty Orbital Shakers	
Model	ISTHBLCTS ISTHBLHTS	ISLD04HDG	ISLDMPHDG, ISLDMPHDGL
			
Temperature Range	17 below ambient to 100°C / ambient +4 to 100°C	Ambient +5° to 65°C	Ambient +5° to 65°C
Speed Range	300 to 3000 rpm	100 to 1200 rpm	100 to 1200 rpm
Timer	1 minute to 99 hours, 59 min	1 second to 160 hours	1 second to 160 hours
Motion	Orbital	Orbital	Orbital
Orbit	3 mm	3 mm	3 mm
Max Weight Capacity	1 Block	3.6 kg(8 lbs)	4 Microplates / 2 Micro-Tube Racks
Audible Alarm	●	●	●
Load Sensor	●	—	—
Drive System	—	Triple Eccentric	Triple Eccentric
Motor Type	Brushless DC Motor	Brushless DC Motor	Brushless DC Motor
Set-Point Retention	● Displays Last Setting	● Displays Last Setting	● Displays Last Setting
Restart/Power Out	●	●	●
Ramp to Speed	●	●	●
Temperature Overshoot Protection	●	—	—
Overload Protection	●	●	●
User Calibration (Temperature)	●	●	●
User Calibration (Speed)	●	—	—
Interface	USB	—	—
Overall Dimensions (L × W × H)	10.25 × 9.75 × 5.2"	17 × 11 × 10.5"	17 × 11 × 7.75"
Included Tray (L × W)	N/A	11 × 7.75"	11 × 7.75"
Platform Options (L × W)	N/A	N/A	N/A

● Yes \* Maximum speed/tilt angle may vary with heavy or unbalanced loads.  
\*\* Centered on tray.

# Incubating & Incubating Cooling Selection Guide

Product Family	Incubating Cooling Light Duty Orbital Shakers	Incubating Rocking & Waving Shakers	
Model	ISICMBCDG	ISRK04HDG	ISWW02HDG
			
Temperature Range	10°C Below Ambient to 65°C	Ambient +5° to 65°C	Ambient +5° to 65°C
Speed Range	100 to 1200 rpm	1 to 50 rpm	1 to 30 rpm
Timer	1 second to 160 hours	1 second to 160 hours	1 second to 160 hours
Motion	Orbital	Rocking	Waving
Orbit	3 mm	Tilt Angle: 0 to 15° *	Tilt Angle: 0 to 20° *
Max Weight Capacity	2 Microplates 2 Modular Blocks	4.5 kg(10 lbs)**	2.3 kg(5 lbs)**
Audible Alarm	●	●	—
Load Sensor	—	—	—
Drive System	Triple Eccentric	Cable	Cable
Motor Type	Brushless DC Motor	Stepper Motor	Stepper Motor
Set-Point Retention	● Displays Last Setting	● Displays Last Setting	● Displays Last Setting
Restart/Power Out	●	●	—
Ramp to Speed	●	●	—
Temperature Overshoot Protection	—	—	—
Overload Protection	●	●	—
User Calibration (Temperature)	—	—	—
User Calibration (Speed)	—	—	—
Interface	—	—	—
Overall Dimensions (L x W x H)	17.9 x 11 x 10.5"	17 x 11 x 10.5"	17 x 11 x 10.5"
Included Tray (L x W)	N/A	10 x 7.5"	9.25 x 7.25"
Platform Options (L x W)	N/A	N/A	N/A

● Yes \* Maximum speed/tilt angle may vary with heavy or unbalanced loads.  
 \*\* Centered on tray.

# Incubating Cooling Thermal Shakers



Thermal Shakers are designed for applications that require consistent and precise high-speed shaking with temp. control to 100°C. With heating & shaking capabilities, our shakers use interchangeable blocks to accommodate tubes & microplates. Intuitive LCD touchscreen allows the user to save & track progress of 5 user-defined programs, each with 5 individual steps. Enhanced electronics provide dependable temp. settings across the operating range.

- Program Control for Five, 5-Step Programs
- Enhanced Electronics Provide Accurate Temperatures Across the Range
- Store and Transfer Data Easily With the Multi-Functional USB

# Incubating Cooling Thermal Shakers



- 4.3" color LCD touch screen display provides an intuitive interface
- Rapid heating, cooling and high speed shaking ability
- Internal memory stores five separate 5-step programs, unlimited with USB



The OHAUS Thermal Shakers and Cooling Thermal Shakers are designed for applications that require consistent and precise results. With heating, cooling and shaking capabilities. The Thermal Shake Touch and Cooling Thermal Shake Touch uses interchangeable blocks to accommodate a wide variety of tubes and microplates. The easy-to-use, 4.3", color, LCD touch screen allows the user to save and visibly track progress through the live status bar for five user defined programs, each with five individual steps. The unit's enhanced electronics and dual temperature sensors provide accurate, dependable temperature settings across the operating range.

### Operating Features:

**Low Profile Design:** The low profile design minimizes the unit's footprint on the bench.

**LCD Touch Screen:** Enables faster setting of temperature, speed, and time which can all be viewed at once. Display features on-screen help topics with operational tips available in six languages. Touch screen is compatible with rubber gloves used in labs. USB port can transfer information to a flash drive for data logging, program storage and software updates.

**Program Control:** Program control capabilities allow user programmable operation for automated use and memory. Storage for five separate 5-step programs, or unlimited number of programs with the use of the USB.

**Temperature ramp rate:** Adjustable temperature ramp rate feature separately defines the heating and cooling rate in increments of 0.5°C/min.

**Single Point Calibration Mode:** For maximum temperature accuracy, the single point calibration procedure allows the user to calibrate up to 6 different user defined temperatures.

**Pulse Mode Feature:** The unit is equipped with a pulse mode feature for quick vortex applications.

### Safety Features:

**Cool Touch Housing:** Constructed from a high-quality, heat and chemical resistant polymer. The unit's housing remains cool to the touch throughout normal operating temperatures.

**Maximum Temperature Limiting Function:** Ensures the temperature will not exceed preset limits, allowing the user control of temperature sensitive samples.

**Hot Top Indicator:** A hot top warning light will illuminate when the temperature reaches 40°C, and will remain lit until the unit is sufficiently cooled.

**Audible Alarm:** In timed mode, an alarm will sound when the time reaches zero or set-point temperature is reached. Additionally, the heat function will automatically shut off if the unit recognizes an internal issue.

### Operating Conditions:

Unit can operate in conditions from 5 to 35°C (41 to 95°F), maximum 80% relative humidity, non-condensing.

### Applications:

Cell cultures, DNA, RNA, and protein studies.

### Ordering Information

Unit includes a detachable, 3-wire cord and plug . Unit is also supplied with a 1.5 mL block, clear rack, and cover.

### Specifications

Temperature Range	Thermal Shaker	4°C above ambient to 100°C
	Cooling Thermal Shaker	17°C below ambient to 100°C
Temperature Accuracy	Thermal Shaker	± 1°C between 20°C and 45°C ± 2°C above 45°C
	Cooling Thermal Shaker	± 0.5°C between 20°C and 45°C ± 2°C below 20°C and above 45°C
Speed Range		300 to 3000 rpm
Speed Accuracy		± 2%
Timer		1 minute to 99 hours, 59 minutes
Orbit		3 mm (0.12")
Cooling Rate		above ambient 2-3°C/min below ambient 0.5-1.0°C/min
Heating Rate		5°C/min
Overall Dimensions (L x W x H)		26 x 24.8 x 13.2 cm (10.25 x 9.75 x 5.2")
Ship Weight		5.4 kg (11.9 lbs)

Description	Model	Item Number	Country Code
Thermal Shaker	ISTHBLHTS	30392005	VN, MY, SG, ID, IN
Thermal Shaker	ISTHBLHTS	30392006	AU, NZ
Thermal Shaker	ISTHBLHTS	30392008	TH, PH
Cooling Thermal Shaker	ISTHBLCTS	30391998	VN, MY, SG, ID, IN
Cooling Thermal Shaker	ISTHBLCTS	30391999	AU, NZ
Cooling Thermal Shaker	ISTHBLCTS	30392001	TH, PH

# Incubating Cooling Thermal Shakers Modular Blocks



## Microplate Block

Sample Type	Well Size	Well Depth	Dimensions (L x W x H)	Item Number
Microplate Thermal Block with Lid	10.7 x 7.1 x 0.25 cm (4.21 x 2.81 x 0.1")	2.3 cm (0.9")	11.9 x 16.3 x 7.6 cm (4.7 x 6.4 x 3.0")	30400126
Sample Type	Well Diameter	Well Depth	Dimensions (L x W x H)	Item Number
384 Well PCR Plate Thermal Block with Lid	0.4 cm (0.16")	0.81 cm (0.32")	11.9 x 16.3 x 7.6 cm (4.7 x 6.4 x 3.0")	30400127
0.2 mL PCR Plate/Tube Thermal Block with Lid	0.64 cm (0.25")	1.27 cm (0.50")	11.9 x 16.3 x 7.6 cm (4.7 x 6.4 x 3.0")	30400128

## Tube Blocks

Sample Type	No. of Wells	Well Diameter	Well Depth	Dimensions (L x W x H)	Item Number
0.5 mL Microtubes*	30	0.79 cm (0.31")	2.46 cm (0.97")	10.2 x 14.2 x 4.6 cm (4.0 x 5.6 x 1.8")	30400129
1.5 mL Microtubes*	24	1.11 cm (0.44")	3.53 cm (1.39")	10.2 x 14.2 x 5.3 cm (4.0 x 5.6 x 2.1")	30400130
2.0 mL Microtubes*	24	1.15 cm (0.45")	3.53 cm (1.39")	10.2 x 14.2 x 5.3 cm (4.0 x 5.6 x 2.1")	30400131
5-7 mL Tubes	24	1.20 cm (0.47")	3.61 cm (1.42")	10.2 x 14.2 x 5.6 cm (4.0 x 5.6 x 2.2")	30400132

\* Supplied with clear rack and cover

## Cryo Tube Block

Sample Type	No. of Wells	Well Diameter	Well Depth	Dimensions (L x W x H)	Item Number
2.0 mL Cryo Tubes	24	1.26 cm (0.50")	3.6 cm (1.42")	10.2 x 14.2 x 5.6 cm (4.0 x 5.6 x 2.2")	30400133

## Conical Tube Blocks

Sample Type	No. of Wells	Well Diameter	Well Depth	Dimensions (L x W x H)	Item Number
5 mL Eppendorf Tube Block	9	1.68 cm (0.66")	4.9 cm (1.93")	10.4 x 14.5 x 7.1 cm (4.1 x 5.7 x 2.8")	30400134
Block For 9 X 15 mL Conical Tubes	9	1.73 cm (0.68")	10.44 cm (4.11")	10.7 x 14.7 x 12.7 cm (4.2 x 5.7 x 5.0")	30400135
50 mL Conical Tubes	4	3.0 cm (1.18")	10.09 cm (3.97")	10.2 x 14.5 x 12.2 cm (4.0 x 5.7 x 4.8")	30400136



## Incubating Light Duty Orbital Shakers



OHAUS Incubating Light Duty Shakers are designed to incubate samples from 10° below ambient to 65°C depending on the model. The Incubating Mini Shaker has an 3.6 kg (8 lb) capacity while the Incubating Microplate Shaker can hold up to four standard or deep well plates. Incubating-Cooling Mini Shaker is designed to hold two microplates or two optional modular tube blocks. All models feature LED displays with touchpad controls.

- Microprocessor-Controlled for Consistent Shaking Action
- Triple Eccentric Drive Provides Reliable Service and Continuous Duty
- Safety Features Include Speed Ramping and Overload Protection

# Incubating Light Duty Orbital Shakers



- LED displays for temperature, speed and time
- Timer with audible alarm
- Calibration mode for temperature

The OHAUS Incubating Light Duty Orbital Shakers are designed to heat and shake a variety of samples.

### Operating Features:

**Microprocessor Control:** The variable speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set-point and will restart if power is interrupted.

**PID Temperature Controller:** Maintains precise temperature control from ambient +5°C to 65°C. Easy-to-use controls allow users to adjust temperature in 1°C increments.

**Triple Eccentric Drive:** Permanently lubricated ball bearings and maintenance free, brushless DC motor provide reliable service and continuous duty operation.

**LED Display:** Touch pad controls with easy-to-read, independent LED displays for temperature, speed and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**Temperature Calibration Mode:** Allows user to calibrate unit to an external temperature device.

### Safety Features:

**Overload Protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed Ramping Feature:** Slowly increases speed to desired set-point to avoid splashing.

**Audible Alarm:** In timed mode, alarm will sound when the time reaches zero.

**Caution Hot Indicator:** Symbol illuminates when the temperature of the air in the chamber reaches 40°C and remains lit until temperature cools down.

**Spill-Resistant Design:** Channels fluids away from internal components.

**Polycarbonate Lid:** Permits viewing of samples without disturbing internal temperature.

### Operating Conditions:

Unit can be run in conditions from 5 to 40°C (41 to 104°F), maximum 80% relative humidity, non-condensing.

### Applications:

Cell cultures, bacterial suspensions, and hybridizations.

### Ordering Information:

Unit includes a detachable, 3-wire cord and plug.

### Specifications

Temperature Range	Ambient +5°C to 65°C
Temperature Uniformity	± 0.5°C at 37°C
Speed Range	100 to 1200 rpm
Speed Accuracy	± 2% of set speed
Timer	1 second to 160 hours
Orbit	3 mm (0.12")
Maximum Weight Capacity	3.6 kg (8 lbs)
Tray Material	Aluminum
Tray Dimensions (L x W)	27.9 x 19.7 cm (11 x 7.75")
Interior Dimensions (L x W x H)	28.7 x 21.1 x 14.5 cm (11.3 x 8.3 x 5.7")
Overall Dimensions (L x W x H)	43.2 x 27.9 x 27 cm (17 x 11 x 10.7")
Ship Weight	13.6 kg (30 lbs)

Description	Model	Item Number	Country Code
Incubating Light Duty Orbital Shaker	ISLD04HDG	30391919	VN, MY, SG, ID, IN
Incubating Light Duty Orbital Shaker	ISLD04HDG	30391920	AU, NZ
Incubating Light Duty Orbital Shaker	ISLD04HDG	30391922	TH, PH

# Incubating Light Duty Orbital Shakers



- LED displays for temperature, speed and time
- Timer with audible alarm
- Available with opaque lid for light sensitive samples

The OHAUS Incubating Microplate Shakers are optimized for shaking microplates, deep-well plates, or micro-tubes.

### Operating Features:

**Microprocessor Control:** The variable speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set-point and will restart if power is interrupted.

**PID Temperature Controller:** Maintains precise temperature control from ambient +5°C to 65°C. Easy-to-use controls allow users to adjust temperature in 1°C increments.

**Triple Eccentric Drive:** Permanently lubricated ball bearings and maintenance free, brushless DC motor provide reliable service and continuous duty operation.

**LED Display:** Touch pad controls with easy-to-read, independent LED displays for temperature, speed, and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**Temperature Calibration Mode:** Allows user to calibrate unit to an external temperature device.

### Safety Features:

**Overload Protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed Ramping Feature:** Slowly increases speed to desired set-point to avoid splashing.

**Audible Alarm:** In timed mode, alarm will sound when the time reaches zero.

**Caution Hot Indicator:** Symbol illuminates when the temperature of the air in the chamber reaches 40°C and remains lit until temperature cools down.

**Spill-Resistant Design:** Channels fluids away from internal components.

**Polycarbonate Lid:** Clear lid permits viewing of samples without disturbing internal temperature. Opaque lid prohibits light exposure to light sensitive samples.

### Operating Conditions:

Unit can be run in conditions from 5 to 40°C (41 to 104°F), maximum 80% relative humidity, non-condensing.

### Applications:

Immunoassays and hybridizations.

### Ordering Information:

Units include a detachable, 3-wire cord and plug.



Specifications	
Temperature Range	Ambient +5°C to 65°C
Temperature Uniformity	± 0.5°C at 37°C
Speed Range	100 to 1200 rpm
Speed Accuracy	± 2%
Timer	1 second to 160 hours
Orbit	3 mm (0.12")
Maximum Weight Capacity	4 microplates or 2 micro-tube racks
Tray Material	Aluminum
Tray Dimensions (L x W)	27.9 x 19.7 cm (11 x 7.75")
Overall Dimensions (L x W x H)	43.2 x 27.9 x 19.7 cm (17 x 11 x 7.75")
Ship Weight	13.6 kg (30 lbs)

Description	Model	Item Number	Country Code
Incubating Microplate Shaker	ISLDMPHDG	30391933	VN, MY, SG, ID, IN
Incubating Microplate Shaker	ISLDMPHDG	30391934	AU, NZ
Incubating Microplate Shaker	ISLDMPHDG	30391936	TH, PH
Incubating Microplate Shaker with Opaque Lid	ISLDMPHDGL	30391926	VN, MY, SG, ID, IN
Incubating Microplate Shaker with Opaque Lid	ISLDMPHDGL	30391927	AU, NZ
Incubating Microplate Shaker with Opaque Lid	ISLDMPHDGL	30391929	TH, PH

# Incubating Cooling Orbital Shakers



OHAUS Incubating Cooling Orbital Shakers are designed to incubate samples from 10° below ambient to 65°C. Incubating Cooling Mini Shaker is designed to hold two microplates or two optional modular tube blocks in a variety of configurations. All models feature touchpad controls with easy-to-read, independent LED displays for temperature, speed and time. Microprocessor control provides consistent uniform shaking action.

- Microprocessor-Controlled for Consistent Shaking Action
- Triple Eccentric Drive Provides Reliable Service and Continuous Duty
- Safety Features Include Speed Ramping and Overload Protection

# Incubating Cooling Orbital Shakers



- Heats to 65°C and cools to 10°C below ambient
- LED displays for temperature, speed and time
- Calibration mode for temperature

The OHAUS Incubating/Cooling Orbital Shaker is microplate ready without the need for any additional accessories. Optional modular blocks can accommodate micro-tubes, centrifuge tubes, vials, or culture tubes. Unit holds microplates or modular blocks with a 12.7 cm (5") tall interior capacity. Ideal for analyses that require a stable, controlled temperature.

### Operating Features:

**Microprocessor Control:** The variable speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set-point and will restart if power is interrupted.

**PID Temperature Controller:** Maintains precise temperature control from 10°C below ambient to 65°C. Easy-to-use controls allow users to adjust temperature in 1°C increments.

**Triple Eccentric Drive:** Permanently lubricated ball bearings and maintenance free, brushless DC motor provide reliable service and continuous duty operation.

**LED Display:** Touch pad controls with easy-to-read, independent LED displays for temperature, speed, and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**Temperature Calibration Mode:** Allows user to calibrate unit to an external temperature device.

### Safety Features:

**Overload Protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed Ramping Feature:** Slowly increases speed to desired set-point to avoid splashing.

**Audible Alarm:** In timed mode, alarm will sound when the time reaches zero. Alarm has optional mute function which can be set from the touch pad control.

**Caution Hot Indicator:** Symbol illuminates when the temperature of the air in the chamber reaches 40°C and remains lit until temperature cools down.

**Spill-Resistant Design:** Channels fluids away from internal components.

Polycarbonate Lid: Permits viewing of samples without disturbing internal temperature.

### Operating Conditions:

Unit can be run in conditions from 5 to 40°C (41 to 104°F), maximum 80% relative humidity, non-condensing.

### Applications:

Cell and bacterial cultures, hybridizations, and enzyme reactions.

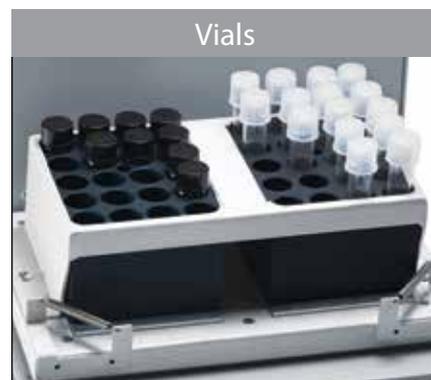
### Ordering Information:

Unit includes a detachable, 3-wire cord and plug. Units are also supplied with an adapter bracket to hold optional modular blocks. See page 35-36 for block options.

Specifications	
Temperature Range	10°C below ambient to 65°C
Temperature Uniformity	± 0.5°C at 37°C
Speed Range using Microplates	100 to 1200 rpm
Speed Range using Modular Blocks	100 to 600 rpm
Speed Accuracy	± 2%
Timer	1 second to 160 hours
Orbit	3 mm (0.12")
Maximum Weight Capacity	2 microplates or 2 modular blocks
Overall Dimensions (L × W × H)	45.5 × 27.9 × 26.7 cm (17.9 × 11 × 10.5")
Ship Weight	15.4 kg (34 lbs)

Description	Model	Item Number	Country Code
Incubating Cooling Light Duty Shaker	ISICMBCDG	30391940	VN, MY, SG, ID, IN
Incubating Cooling Light Duty Shaker	ISICMBCDG	30391941	AU, NZ
Incubating Cooling Light Duty Shaker	ISICMBCDG	30391943	TH, PH

# Incubating Light Duty Orbital Shakers Modular Blocks



## Modular Blocks

Modular Blocks are constructed from a solid anodized aluminum block. The close contact of tubes to block walls allow for maximum temperature transfer.

**Block dimensions** (L × W × H): 9.5 × 7.6 × 5.1 cm (3.75 × 3 × 2")

**Applications:** Cell cultures, hybridizations, and extraction procedures

**OHAUS modular blocks also fit in the OHAUS Dry Block Heaters.**

Constructed of anodized aluminum, this material is ideal for its temperature conducting and corrosion resistant properties.

## Microcentrifuge Tube Blocks

### Single block

Sample Type	No. of Wells	Well Diameter	Well Depth	Item Number
0.5 mL tube	30	7.9 mm	27.6 mm	30400157
1.5 mL tube	20	11.1 mm	39.1 mm	30400159
2 mL tube	20	11.5 mm	38.1 mm	30400191



## Conical-Bottom Centrifuge Tube Blocks

### Single block

Sample Type	No. of Wells	Well Diameter	Well Depth	Item Number
15 mL tube	12	17.1 mm	44.5 mm	30400172
50 mL tube	5	29.0 mm	47.6 mm	30400168



# Incubating Light Duty Orbital Shakers Modular Blocks

## Standard Test Tube Blocks

### Single block

Sample Type	No. of Wells	Well Diameter	Well Depth	Item Number
6 mm tube	30	8.3 mm	48.4 mm	30400158
10 mm tube	24	10.7 mm	48.4 mm	30400151
12/13 mm tube	20	13.9 mm	48.4 mm	30400152



## Centrifuge Tube Combination Block

### Single block

These blocks have been designed for variable sized samples.

Sample Type	No. of Wells	Well Diameter	Well Depth	Item Number
<b>Test Tube Combination</b>				
6 mm	6	8.3 mm	48.4 mm	30400156
12/13 mm	5	13.8 mm	48.4 mm	
25 mm	3	26.2 mm	48.4 mm	
<b>Centrifuge Tube Combination</b>				
1.5 mL	4	11.1 mm	39.1 mm	30400193
15 mL	3	17.1 mm	44.5 mm	
50 mL	2	29.0 mm	47.6 mm	
<b>Micro-Tube Combination</b>				
0.5 mL	6	7.9 mm	27.6 mm	30400194
1.5 mL	10	11.1 mm	39.1 mm	
2 mL	5	11.5 mm	38.1 mm	



## Vial Blocks

### Single block

Designed for sample/serum and scintillation vials.

Sample Type	No. of Wells	Well Diameter	Well Depth	Item Number
12 mm vial	20	12.7 mm	30 mm	30400182
15 mm vial	20	15.8 mm	35 mm	30400183
16 mm vial	15	16.4 mm	45 mm	30400190
17 mm vial	12	17.8 mm	45 mm	30400184
19 mm vial	12	19.7 mm	45 mm	30400185
21 mm vial	9	21.7 mm	45 mm	30400186
23 mm vial	8	23.8 mm	45 mm	30400187
25 mm vial	8	25.8 mm	45 mm	30400188
28 mm vial	6	28.8 mm	45 mm	30400189



## Incubating Rocking & Waving Shakers



OHAUS Incubating Rocking and Waving Shakers are designed to incubate samples from 5° above ambient to 65°C to provide accurate and repeatable results. Rocking shakers provide a see-saw like motion, while waving shakers offer a smooth, low-foaming three-dimensional “wave” motion. All models feature LED displays with touchpad controls. Both models include safety features that protect both the user and samples.

- Independent LEDs and Touchpad Control for Temperature, Speed/Tilt Angle and Time
- Microprocessor Control with PID Temperature Control for Precise Control
- Electronic tilt adjustment while unit is operating

# Incubating Rocking & Waving Shakers



- Electronic tilt adjustment from 0 to 15° while unit is operating
- LED displays for temperature, speed and tilt angle, and time
- Timer with audible alarm

The OHAUS Incubating Rocking Shaker combines smooth rocking motion and general purpose incubation in one compact bench top unit.

### Operating Features:

**Microprocessor Control:** The microprocessor control provides electronic tilt angle adjustment which allows user to easily adjust rocking angle from 0 to 15° while unit is operating. Precise speed control provides smooth, low-speed rocking motion down to 1 rpm.

**PID Temperature Controller:** Maintains precise temperature control from ambient +5°C to 65°C. Easy-to-use controls allow users to adjust temperature in 1°C increments.

**LED Display:** Touch pad controls with easy-to-read, independent LED displays for temperature, speed and tilt angle, and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

### Safety Features:

**Overload Protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed Ramping Feature:** Slowly increases speed to desired set-point to avoid splashing.

**Audible Alarm:** In timed mode, alarm will sound when the time reaches zero.

**Caution Hot Indicator:** Symbol illuminates when the temperature of the air in the chamber reaches 40°C and remains lit until temperature cools down.

**Spill-Resistant Design:** Channels fluids away from internal components.

**Polycarbonate Lid:** Permits viewing of samples without disturbing internal temperature.

### Operating Conditions:

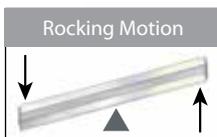
Unit can be run in conditions from 5 to 40°C (41 to 104°F), maximum 80% relative humidity, non-condensing.

### Applications:

Cell cultures, staining and destaining gels, hybridization procedures, and blotting techniques.

### Ordering Information:

Unit includes a detachable, 3-wire cord and plug.



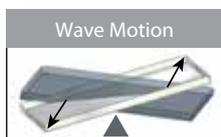
Specifications	
Temperature Range	Ambient +5°C to 65°C
Temperature Uniformity	± 0.5°C at 37°C
Speed Range	1 to 50 rpm *
Speed Accuracy	± 1 rpm
Tilt Angle	0 to 15° *
Timer	1 second to 160 hours
Maximum Weight Capacity	4.5 kg (10 lbs) **
Tray Material	Aluminum
Tray Dimensions (L x W)	25.4 x 19.1 cm (10 x 7.5")
Interior Dimensions (L x W x H)	27.3 x 19.7 x 9.7 cm (10.75 x 7.75 x 3.8")
Overall Dimensions (L x W x H)	43.2 x 27.9 x 26.7 cm (17 x 11 x 10.5")
Ship Weight	10 kg (22 lbs)

\* Maximum speed/tilt angle may vary with heavy or unbalanced loads.

\*\* Centered on tray.

Description	Model	Item Number	Country Code
Incubating Rocking Shaker	ISRK04HDG	30391975	VN, MY, SG, ID, IN
Incubating Rocking Shaker	ISRK04HDG	30391976	AU, NZ
Incubating Rocking Shaker	ISRK04HDG	30391978	TH, PH

# Incubating Rocking & Waving Shakers



- Electronic tilt adjustment from 0 to 20° while unit is operating
- LED displays for temperature, speed and tilt angle, and time
- Timer with audible alarm

The OHAUS Incubating Waving Shaker combines the unique vertical and horizontal “wave” motion with general purpose incubation in one compact bench top unit.

### Operating Features:

**Microprocessor Control:** The microprocessor control provides electronic tilt angle adjustment which allows user to easily adjust waving angle from 0 to 20° while unit is operating. Precise speed control provides smooth, low-speed waving motion down to 1 rpm.

**PID Temperature Controller:** Maintains precise temperature control from ambient +5°C to 65°C. Easy-to-use controls allow users to adjust temperature in 1°C increments.

**LED Display:** Touch pad controls with easy-to-read, independent LED displays for temperature, speed and tilt angle, and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

### Safety Features:

**Overload Protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed Ramping Feature:** Slowly increases speed to desired set-point to avoid splashing.

**Audible Alarm:** In timed mode, alarm will sound when the time reaches zero.

**Caution Hot Indicator:** Symbol illuminates when the temperature of the air in the chamber reaches 40°C and remains lit until temperature cools down.

**Spill-Resistant Design:** Channels fluids away from internal components.

**Polycarbonate Lid:** Permits viewing of samples without disturbing internal temperature.

### Operating Conditions:

Unit can be run in conditions from 5 to 40°C (41 to 104°F), maximum 80% relative humidity, non-condensing.

### Applications:

Cell cultures, hybridization procedures, and blotting techniques.

### Ordering Information:

Unit includes a detachable, 3-wire cord and plug.

## Specifications

Temperature Range	Ambient +5°C to 65°C
Temperature Uniformity	± 0.5°C at 37°C
Speed Range	1 to 30 rpm *
Speed Accuracy	± 1 rpm
Tilt Angle	0 to 20° *
Timer	1 second to 160 hours
Maximum Weight Capacity	2.3 kg (5 lbs) **
Tray Material	Aluminum
Tray Dimensions (L x W)	23.5 x 18.4 cm (9.25 x 7.25")
Interior Dimensions (L x W x H)	27.3 x 19.7 x 8.6 cm (10.75 x 7.75 x 3.4")
Overall Dimensions (L x W x H)	43.2 x 27.9 x 26.7 cm (17 x 11 x 10.5")
Ship Weight	10 kg (22 lbs)

\* Maximum speed/tilt angle may vary with heavy or unbalanced loads.

\*\* Centered on tray.

Description	Model	Item Number	Country Code
Incubating Waving Shaker	ISWV02HDG	30391982	VN, MY, SG, ID, IN
Incubating Waving Shaker	ISWV02HDG	30391983	AU, NZ
Incubating Waving Shaker	ISWV02HDG	30391985	TH, PH

# Open Air and Incubating & Incubating Cooling Shakers Accessories

## Universal Platforms

Allows for mounting of flask clamps, test tube racks, and bottle clamps. Platform slides over top of included tray and is tightened with adjustment screws. Optional accessories screw directly into mounting point openings. The two-tier braces allow stacking of platforms with a 10" clearance (available for select sizes). An optional non-skid rubber mat can be placed on the platform for an added non-slip surface. The platform is constructed of type 304 stainless steel.



Description	Used on Shakers	Item Number
28 x 33 cm (11 x 13") Universal Platform	Analog/ Digital 16 kg shakers and Reciprocating Shakers	30400052
33 x 33 cm (13 x 13") Universal Platform	Analog/ Digital 16 kg shakers and Reciprocating Shakers	30400053
46 x 46 cm (18 x 18") Universal Platform*	Analog/ Digital 16 kg shakers and Reciprocating Shakers	30400054
61 X 46 cm (24 X 18") Universal Platform*	Analog/ Digital 16 kg & 23 kg shakers and Reciprocating Shakers	30400056
61 x 61 cm (24 x 24") Universal Platform	Digital 45 kg shakers	30400057
76 X 46 cm (30 X 18") Universal Platform*	Analog/Digital 23 kg Shakers	30400058
91 x 61 cm (36 x 24") Universal Platform	Digital 68 kg Shakers	30400059
Two-Tier Braces (set of 4)	Analog/ Digital 16 kg & 23 kg shakers	30400051

## Rubber Mats

Description	Used on Shakers	Item Number
33 x 33 cm (13 x 13") Rubber Mat	Analog/ Digital 16 kg shakers and Reciprocating Shakers	30400061
46 x 46 cm (18 x 18") Rubber Mat	Analog/ Digital 16 kg shakers and Reciprocating Shakers	30400062
61 x 61 cm (24 x 24") Rubber Mat	Digital 45 kg shakers	30400064
61 x 91 cm (24 x 36") Rubber Mat	Digital 68 kg shakers	30400065

## Culture Platforms

Ideal for slow speed applications; Petri dishes, culture flasks, and other flat bottom, low profile vessels. The two-tier braces (available for both sizes) allow stacking of platforms with a 10" clearance. The platform is constructed of type 304 stainless steel. The platform has a non-skid rubber surface.



Description	Used on Shakers	Item Number
46 x 46 cm (18 x 18") Culture Platform*	Analog/ Digital 16 kg shakers and Reciprocating Shakers	30400066
46 X 61 cm (18 X 24") Culture Platform*	Analog/ Digital 16 kg & 23 kg shakers and Reciprocating Shakers	30400067
Two-Tier Braces (set of 4)	Analog/ Digital 16 kg & 23 kg shakers	30400051

## Adjustable Platforms

Adjustable clamping bars accommodate various vessel types. Constructed of stainless steel. The base tray has a non-skid rubber surface.



Description	Bar Size	Overall Dimensions	Used on Shakers	Item Number
2-bar Adjustable Platform	21.8 cm (8.6")	22 x 30 cm (8.75 x 11.75")	Digital 4 kg Shakers	30400121
4-bar Adjustable Platform	45.7 cm (18")	46 x 46 cm (18 x 18")	Analog/ Digital 16 kg shakers	30400068
4-bar Adjustable Platform	45.7 cm (18")	61 x 46 cm (24 x 18")	Analog/ Digital 23 kg shakers	30400069

## Replacement Parts

Description	Used with Platforms	Item Number
22 cm (8.6") adjustable bar (with mounting hardware)	30400121	30400122
46cm (18") adjustable bar (with mounting hardware)	30400068 & 3040069	30400073

# Open Air and Incubating & Incubating Cooling Shakers Accessories

## Dedicated Platforms

Pre-mounted flask clamps for maximum utilization of platform space for flasks of all one size. The two-tier braces allow stacking of platforms with a clearance (available for select sizes). Platform is constructed of type 304 stainless steel. Flask clamps are constructed of PVC. Ideal for polycarbonate flasks.



Description	Flask Capacity	Used on Shakers	Item Number
33 × 33 cm (13 × 13") Dedicated Platform / 125 mL Flask Clamp	16	Analog/ Digital 16 kg shakers and Reciprocating Shakers	30400075
33 × 33 cm (13 × 13") Dedicated Platform / 250 mL Flask Clamp	12	Analog/ Digital 16 kg shakers and Reciprocating Shakers	30400076
33 × 33 cm (13 × 13") Dedicated Platform / 500 mL Flask Clamp	8	Analog/ Digital 16 kg shakers and Reciprocating Shakers	30400077
33 × 33 cm (13 × 13") Dedicated Platform / 1 L Flask Clamp	4	Analog/ Digital 16 kg shakers and Reciprocating Shakers	30400078
46 × 46 cm (18 × 18") Dedicated Platform / 125 mL Flask Clamp*	27	Analog/ Digital 16 kg shakers and Reciprocating Shakers	30400079
46 × 46 cm (18 × 18") Dedicated Platform / 250 mL Flask Clamp*	20	Analog/ Digital 16 kg shakers and Reciprocating Shakers	30400080
46 × 46 cm (18 × 18") Dedicated Platform / 500 mL Flask Clamp*	13	Analog/ Digital 16 kg shakers and Reciprocating Shakers	30400081
46 × 46 cm (18 × 18") Dedicated Platform / 1 L Flask Clamp	9	Analog/ Digital 16 kg shakers and Reciprocating Shakers	30400082
Two-Tier Braces (set of 4)		Analog/ Digital 16 kg shakers	30400051

## Large Vessel Carrier Platforms

Ideal for large sample containers like carboys, jugs, and bottles. The platforms' high side walls secure samples, has a heavy-duty design and is constructed of stainless steel. The base tray has a non-skid rubber surface.



Replacement Part	Used with Carrier	Item Number
46 cm (18") adjustable bar (with mounting hardware)	30400070	30400073
61 cm (24") adjustable bar (with mounting hardware)	30400071 & 30400072	30400074

Description	Bar Size	Overall Dimensions (L × W × H)	Used on Shakers	Item Number
4-bar Large Vessel Carrier Platform	45.7 cm (18")	76.4 × 45.9 × 35.3 cm (30.1 × 18.1 × 13.9")	Analog/Digital 23 kg Shakers	30400070
4-bar Large Vessel Carrier Platform	61 cm (24")	61.9 × 61.7 × 36.0 cm (24.4 × 24.3 × 14.2")	Digital 45 kg Shakers	30400071
5-bar Large Vessel Carrier Platform	61 cm (24")	93.7 × 61.7 × 36.0 cm (36.9 × 24.3 × 14.2")	Digital 68 kg Shakers	30400072

## Microplate Clamp

Can hold one standard microplate or deep-well plate. Constructed of type 304 stainless steel.

Description	Used on Shakers	Item Number
Microplate Clamp	Analog/Digital 16 kg, 23 kg, 45 kg, & 68 kg Shakers	30400104



### Platform Capacities for Microplate Clamps

Platform Size	Platform Item Number	Microplate Clamps
11 × 13	30400052	4
13 × 13	30400053	6
18 × 18	30400054	12
18 × 24	30400056	18
18 × 30	30400057	21
24 × 24	30400058	24
24 × 36	30400059	36

# Open Air and Incubating & Incubating Cooling Shakers Accessories

## Separatory Funnel Platform

Holds 3 funnels at once on an 45.7 × 45.7 cm (18 × 18") platform. Platform can accommodate 500 mL to 2 L separatory funnels and is constructed of stainless steel. Includes platform, clamps and hardware to secure 3 funnels.

Description	Used on Shakers	Item Number
46 x 46 cm(18 X 18") adjustable bar (with mounting hardware)	Analog/Digital 16 kg shakers and Reciprocating Shakers	30400083



## Universal Harness

Attaches to tray to secure low profile plates.

Description	Used on Shakers	Item Number
Universal Harness	Digital 4 kg Open Air Orbital Shakers	30400123



## Dimpled Mat

Designed to hold centrifuge tubes, vials, culture tubes, and micro-tubes securely in place. Mat can easily be removed for cleaning and transporting of tubes from bench to tray.

Description	Used on Shakers	Item Number
Dimpled Mat, 32.4 × 25.4 cm (12.75 × 10")	Digital Rocking Shaker	30400140
Dimpled Mat, 29.9 × 22.2 cm (11.75 × 8.75")	Digital waving Shaker	30400142
Dimpled Mat, 25.4 × 19.1 cm (10 × 7.5")	Incubating Rocking Shaker	30400141
Dimpled Mat, 23.5 × 18.4 cm (9.25 × 7.25")	Incubating Waving Shaker	30400143
Dimpled Mat, 22 × 30 cm (8.75 × 11.75")	Open Air 4 kg Orbital Shaker	30400124
Dimpled Mat, 35.6 × 27.9 cm (14 × 11")	Analog Rocking & Waving Shaker	30400144



## Stacking Tray

Easily attaches to the units' included tray to add a second tier for higher capacity applications. Second tier tray mounts 8.9 cm (3.5") above lower tray. The tray includes hardware and a rubber mat.

Description	Used on Shakers	Item Number
Stacking Tray, 32.4 × 25.4 cm (12.75 × 10")	Digital Rocking Shaker	30400137
Stacking Tray, 29.9 × 22.2 cm (11.75 × 8.75")	Digital Waving Shaker	30400138
Stacking Tray, 35.6 × 27.9 cm (14 × 11")	Analog Rocking Shaker	30400139



## Dilution Cup Tray

Constructed of type 304 stainless steel. Holds 24 × 28 mm dilution vials.

Description	Used on Unit	Item Number
Stacking Tray, 32.4 × 25.4 cm (12.75 × 10")	Digital 4 kg Open Air Orbital Shakers	30400125



## Micro-Tube Rack

Optional 1.5 to 2 mL Micro-Tube Rack attaches to tray to hold up to 70 × 1.5 mL or 2 mL micro-tubes. Tray can accommodate up to 2 micro-tube racks.

Description	Used on Unit	Item Number
1.5 to 2 mL Micro-Tube Rack	Digital Open Air and Incubating Microplate Shaker	30400114



# Open Air and Incubating & Incubating Cooling Shakers Accessories

## Stainless Steel Flask Clamps

Designed to hold Erlenmeyer flasks from 10 mL to 6 L. Constructed of type 302 and 304 stainless steel. Includes hardware for easy attachment to platforms. Flask clamps 50 mL and higher are supplied with a spring to hold the flask in place. The 2.8 L clamp is designed to hold a Fernbach flask. Media bottle clamps feature the same details as flask clamps.



Clamp Style	10 mL Erlenmeyer Flask Clamp	25 mL Erlenmeyer Flask Clamp	50 mL Erlenmeyer Flask Clamp	125 mL Erlenmeyer Flask Clamp	250 mL Erlenmeyer Flask Clamp	500 mL Erlenmeyer Flask Clamp	1 L Erlenmeyer Flask Clamp	2 L Erlenmeyer Flask Clamp
Material	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Item Number	30400084	30400085	30400086	30400087	30400088	30400089	30400090	30400091
Tray or Platform	Number of Flask Clamps per Tray or Platform							
29.9 × 22.2 cm (11.75 × 8.75")								
Open Air Digital 4 kg Shakers	35	20	15	12	6	4	N/A	N/A
27.9 × 19.7 cm (11 × 7.75")								
Incubating 4 kg Shakers	35	20	12	8	5	N/A	N/A	N/A
27.9 × 33 cm (11 × 13")								
Analog/Digital 16 kg Shakers	60	25	13	10	9	7	4	N/A
Digital Reciprocating Shakers	60	25	13	10	9	7	4	N/A
33 × 33 cm (13 × 13")								
Analog/Digital 16 kg Shakers	60	30	15	12	12	8	4	3
Digital Reciprocating Shakers	60	30	15	12	12	8	4	3
45.7 × 45.7 cm (18 × 18")								
Analog/Digital 16 kg Shakers	113	64	32	20	20	13	8	5
Digital Reciprocating Shakers	113	64	32	20	20	13	8	5
45.7 × 61 cm (18 × 24")								
Analog/Digital 16 kg Shakers	158	88	44	28	28	20	12	6
Digital Reciprocating Shakers	158	88	44	28	28	20	12	6
Analog/Digital 23 kg Shakers	158	88	44	28	28	20	12	6
45.7 × 76.2 cm (18 × 30")								
Analog/Digital 23 kg Shakers	203	112	56	36	36	26	15	8
61 × 61 cm (24 × 24")								
Digital 45 kg Shakers	221	121	61	41	41	25	16	9
61 × 91.4 cm (24 × 36")								
Digital 63 kg Shakers	336	160	94	61	64	40	24	14

\*All units require a universal platform for mounting flask clamps or test tube racks with the exception of the Digital open air and incubating 4 kg shakers

# Open Air and Incubating & Incubating Cooling Shakers Accessories

## PVC Flask Clamps

Constructed of one piece, molded PVC. Autoclavable. Will not scratch or mark flask like other clamps. Includes hardware for easy attachment to universal platforms. The attachment and removal of flasks is quick and easy. Ideal for polycarbonate flasks.



2.8 L & 3 L Fernbach Flask Clamp	4 L Erlenmeyer Flask Clamp	6 L Erlenmeyer Flask Clamp	500 mL Media Bottle Clamp	1 L Media Bottle Clamp	125 mL Erlenmeyer Flask Clamp	250 mL Erlenmeyer Flask Clamp	500 mL Erlenmeyer Flask Clamp	1 L Erlenmeyer Flask Clamp	2 L Erlenmeyer Flask Clamp
Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	PVC	PVC	PVC	PVC	PVC
2.8L-30400092 3L-30400093	30400094	30400096	30400097	30400098	30400099	30400100	30400101	30400102	30400103

Number of Flask Clamps per Tray or Platform

N/A	N/A	N/A	3	N/A	12	6	4	N/A	N/A
N/A	N/A	N/A	N/A	N/A	8	4	N/A	N/A	N/A
N/A	N/A	N/A	5	2	10	8	5	2	N/A
N/A	N/A	N/A	5	2	10	8	5	2	N/A
1	1	1	6	5	12	10	6	4	3
1	1	1	6	5	12	10	6	4	3
2	4	2	16	10	20	18	12	8	4
2	4	2	16	10	20	18	12	8	4
3	4	3	20	13	28	25	16	10	6
3	4	3	20	13	28	25	16	10	6
3	4	3	20	13	28	25	16	10	6
3	6	4	28	18	36	33	20	14	8
5	5	5	25	18	41	35	24	13	9
7	9	7	40	30	61	55	38	22	13

# Open Air and Incubating & Incubating Cooling Shakers Accessories

## Test Tube Racks

### Half Size, Stationary

Racks constructed of PVC coated steel. Includes hardware for easy attachment to platforms.

#### Dimensions:

12.7 L x 17.8 W x 10.2 cm H (5 x 7 x 4") / Micro-Tube Rack: 4.3 cm H (1.7").



Test Tube Style	1.5 to 2 mL Micro-Tube Rack Half Size, Stationary	10 to 13 mm Test Tube Rack Half Size, Stationary	14 to 16 mm Test Tube Rack Half Size, Stationary	18 to 20 mm Test Tube Rack Half Size, Stationary	22 to 25 mm Test Tube Rack Half Size, Stationary	15 mL Centrifuge Tube Rack Half Size, Stationary	50 mL Centrifuge Tube Rack Half Size, Stationary
Tube Capacity	70	63	48	35	24	35	12
Item Number	30400114	30400115	30400116	30400117	30400118	30400119	30400120
Tray or Platform	Number of Test Tube Racks per Tray or Platform						
29.9 x 22.2 cm (11.75 x 8.75")							
Digital Open Air 4 kg Shakers	2	2	2	2	2	2	2
27.9 x 19.7 cm (11 x 7.75")							
Incubating 4 kg Shakers	2	1	1	N/A	N/A	1	1
Digital Open Air 4 kg Shakers	2	N/A	N/A	N/A	N/A	N/A	N/A
Incubating Microplate Shakers	2	N/A	N/A	N/A	N/A	N/A	N/A
27.9 x 33 cm (11 x 13")							
Analog/Digital 16 kg Shakers	2	2	2	2	2	2	2
Digital Reciprocating Shakers	2	2	2	2	2	2	2
33 cm x 33 cm (13 x 13")							
Analog/Digital 16 kg Shakers	2	2	2	2	2	2	2
Digital Reciprocating Shakers	2	2	2	2	2	2	2
45.7 x 45.7 cm (18 x 18")							
Analog/Digital 16 kg Shaker	4	4	4	4	4	4	4
Digital Reciprocating Shakers	4	4	4	4	4	4	4
45.7 x 61 cm (18 x 24")							
Analog/Digital 16 kg Shakers	6	6	6	6	6	6	6
Digital Reciprocating Shakers	6	6	6	6	6	6	6
Analog/Digital 23 kg Shakers	6	6	6	6	6	6	6
45.7 x 76.2 cm (18 x 30")							
Analog/Digital 23 kg Shakers	8	8	8	8	8	8	8
61 x 61 cm (24 x 24")							
Digital 45 kg Shakers	8	8	8	8	8	8	8
61 x 91.4 cm (24 x 36")							
Digital 63 kg Shakers	7	7	7	7	7	7	7

\* All units require a universal platform for mounting flask clamps or test tube racks with the exception of the Digital open air and incubating 4 kg shakers

# Open Air and Incubating & Incubating Cooling Shakers Accessories

## Test Tube Racks

### Full Size, Stationary

Racks constructed of PVC coated steel. Includes hardware for easy attachment to platforms.

#### Dimensions

9.5 L × 41.9 W × 10.2 cm H (3.75 × 16.5 × 4")

### Full Size, Pivoting

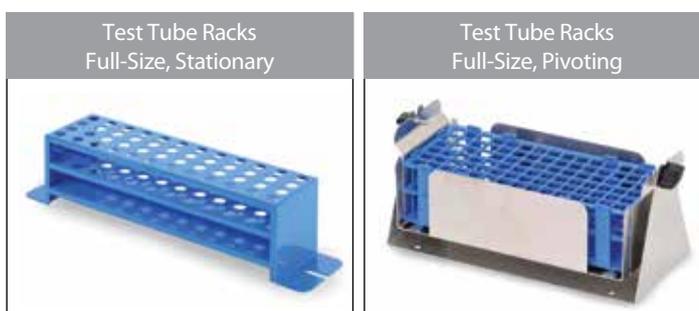
Has adjustable angle, custom tilt. Stainless steel holder includes removable plastic rack. Rack is easily removed to transport from work area to shaker.

#### Inside pivoting rack dimensions:

12.9 × 27.4 × 9.9 cm (5.1 × 10.8 × 3.9")

#### Outside stationary rack dimensions:

12.7 × 27.6 × 12.7 cm (5.0 × 10.9 × 5")



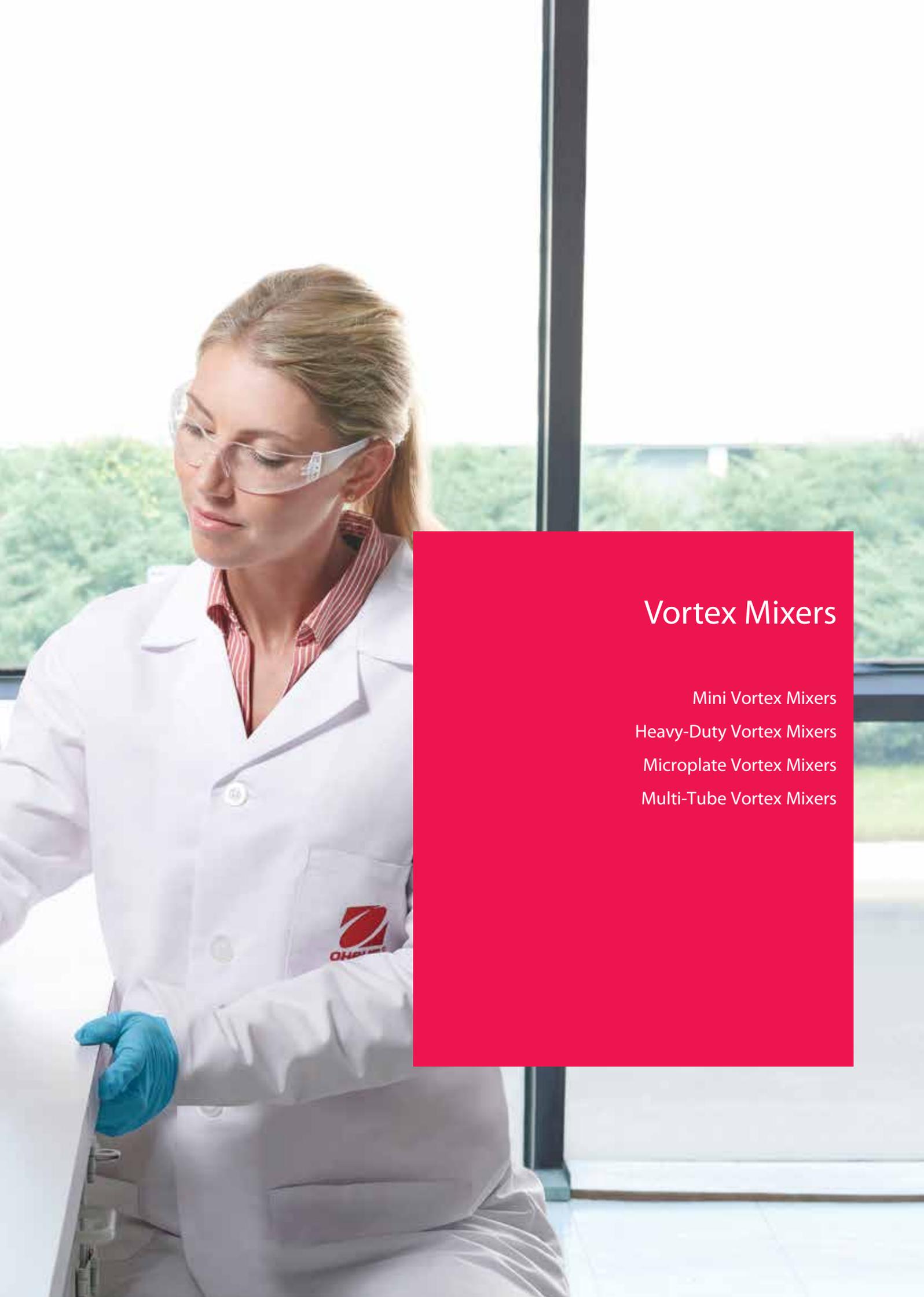
10 to 14 mm Test Tube Rack	16 to 20 mm Test Tube Rack	21 to 25 mm Test Tube Rack	50 mL Centrifuge Tube Rack	13 mm Test Tube Rack	16 mm Test Tube Rack	20 mm Test Tube Rack	25 mm Tube Rack	30 mm Tube Rack
Full Size, Stationary	Full Size, Stationary	Full Size Stationary	Full Size, Stationary	Full Size, Pivoting	Full Size, Pivoting	Full Size, Pivoting	Full Size, Pivoting	Full Size, Pivoting
48	33	21	17	90	60	40	24	21
30400110	30400111	30400112	30400113	30400105	30400106	30400107	30400108	30400109

Number of Test Tube Racks per Tray or Platform

N/A								
N/A								
N/A								
N/A								
N/A	N/A	N/A	N/A	1	1	1	1	1
N/A	N/A	N/A	N/A	1	1	1	1	1
N/A								
N/A								
N/A								
5	5	5	5	3	3	3	3	3
5	5	5	5	3	3	3	3	3
5	5	5	5	3	3	3	3	3
6	6	6	6	4	4	4	4	4
7	7	7	7	4	4	4	4	4
5	5	5	5	6	6	6	6	6

# Vortex Mixers





## Vortex Mixers

Mini Vortex Mixers

Heavy-Duty Vortex Mixers

Microplate Vortex Mixers

Multi-Tube Vortex Mixers

## Mini Vortex Mixers



Four Mini Vortex Mixer models for gentle to high-speed mixing are available. Analog model offers variable speed control, and digital model allows input of the exact speed and time to achieve reproducible results. Pulsing model features a unique pulse action that reduces heat generation, while providing more effective mixing and cell disruption. Fixed speed model offers one-touch, high-speed mixing.

- Select from Two Modes of Operation—Touch or Continuous
- Variable Speed Models Offer Low RPM Start Up to High-Speed Mixing
- Fixed Speed Models Provide Full RPM for Vigorous Mixing

## Fixed Speed Vortex Mixer

- Sturdy design
- Fixed high speed mixing
- Touch mode operation

Built sturdy to provide stable and reliable vortexing action. Starts mixing when the cup head is pressed down. Speed is fixed at full rpm to provide vigorous vortexing of samples.

### Operating Conditions:

Unit can be run in conditions from 4 to 40°C (39 to 104°F), 20% to 85% relative humidity, non-condensing.

### Ordering Information:

Units include a 3-wire cord and plug . Includes both cup head and 3" head with cover.



This product includes:

Description	Item Number
Cup Head	30400235
7.6 cm (3") Head	30400236
7.6 cm (3") Rubber Head Cover	30400237



Description	Model	Item Number	Country Code
Fixed Speed Vortex Mixer	VXMNFS	30392110	VN, MY, SG, ID, IN
	VXMNFS	30392111	AU, NZ
	VXMNFS	30392113	TH, PH

Specifications	
Speed Range 120V 230V	3200 rpm 2800 rpm
Orbit	4.9 mm (0.19")
Controls	None
Duty Rating	Intermittent duty
Dimensions (L x W x H)	21.1 x 12.2 x 16.5 cm (8.3" x 4.8" x 6.5" )
Ship Weight	4.5 kg (10 lbs)

## Analog Vortex Mixer



- Sturdy design
- Variable, analog speed control
- Continuous or touch mode operation

Built sturdy to provide stable and reliable vortexing action. Control allows low rpm startup for gentle shaking or high speed mixing for vigorous vortexing of samples. Two modes of operation; continuous mode when using accessory attachments or touch mode which activates mixing when depressing the cup head.

### Operating Conditions:

Unit can be run in conditions from 4 to 40°C (39 to 104°F), 20% to 85% relative humidity, non-condensing.

### Ordering Information:

Units include a 3-wire cord and plug . Includes both cup head and 3" head with cover. Additional accessories can be found on pages 52-53.

This product includes:

Description	Item Number
Cup Head	30400235
7.6 cm (3") Head	30400236
7.6 cm (3") Rubber Head Cover	30400237



Description	Model	Item Number	Country Code
Analog Vortex Mixer	VXMNAL	30392117	VN, MY, SG, ID, IN
	VXMNAL	30392118	AU, NZ
	VXMNAL	30392120	TH, PH

Specifications	
Speed Range* 120V 230V	300 to 3200 rpm 300 to 2800 rpm
Orbit	4.9 mm (0.19")
Controls	Auto/Off/On Rocker Switch, Speed Knob: Variable 1 to 10 Dial Marks
Duty Rating	Intermittent duty
Dimensions (L x W x H)	21.1 x 12.2 x 16.5 cm (8.3" x 4.8" x 6.5")
Ship Weight	4.5 kg (10 lbs)

\* Maximum speed will vary depending on accessory used.

# Digital Vortex Mixer



- Sturdy design
- LED displays for speed and time
- Continuous or touch mode operation

Built sturdy to provide stable and reliable vortexing action. Ideal for applications that demand repeatable results. Microprocessor control maintains set speed for strong, consistent mixing action. Timer will display elapsed time or, when programmed to user defined time limit, the unit will shut off when time reaches zero. Two modes of operation; continuous mode when using accessory attachments or touch mode which activates mixing when depressing the cup head.

### Operating Conditions:

Unit can be run in conditions from 4 to 40°C (39 to 104°F), 20% to 85% relative humidity, non-condensing.

### Ordering Information:

Units include a 3-wire cord and plug. Includes both cup head and 3" head with cover. Additional accessories can be found on pages 52-53..

### This product includes:

Description	Item Number
Cup Head	30400235
7.6 cm (3") Head	30400236
7.6 cm (3") Rubber Head Cover	30400237



Description	Model	Item Number	Country Code
Digital Vortex Mixer	VXMNDG	30392124	VN, MY, SG, ID, IN
	VXMNDG	30392125	AU, NZ
	VXMNDG	30392127	TH, PH

Specifications	
Speed Range* 120V 230V	500 to 3000 rpm 500 to 2800 rpm
Timer	1 second to 160 hours
Orbit	4.9 mm (0.19")
Controls	Auto/Standby/On Rocker Switch, LED Displays for Speed/Time, Up/Down Buttons for Set-Point Control
Duty Rating	Intermittent duty
Dimensions (L x W x H)	21.1 x 12.2 x 16.5 cm (8.3" x 4.8" x 6.5")
Ship Weight	4.5 kg (10 lbs)

\* Maximum speed will vary depending on accessory used.

# Pulsing Vortex Mixer

- Sturdy design
- LED displays for time and speed
- Glass bead cell disruption/homogenization

Built sturdy to provide stable and reliable vortexing action. Powerful pulsing vortex action produces excellent cell disruption for glass bead procedures. Capable of complete cell disruption of samples in only minutes. Unique pulsing action reduces heat generation while providing more effective mixing and disruption.

### Operating Conditions:

Unit can be run in conditions from 4 to 40°C (39 to 104°F), 20% to 85% relative humidity, non-condensing.

### Ordering Information:

Units include a 3-wire cord and plug. Includes cup head, 3" head with cover, and an easy-to-load 1.5 mL to 2 mL Micro-Tube Holder. Holder has a built-in cup head. Additional accessories can be found on pages 52-53.

### This product includes:

Description	Item Number
Cup Head	30400235
7.6 cm (3") Head	30400236
7.6 cm (3") Rubber Head Cover	30400237
Stainless Steel Tube Holder	30400206



Description	Model	Item Number	Country Code
Pulsing Vortex Mixer	VXMNPS	30392131	VN, MY, SG, ID, IN
	VXMNPS	30392132	AU, NZ
	VXMNPS	30392134	TH, PH



Specifications	
Speed Range* 120V 230V	500 to 3000 rpm 500 to 2800 rpm
Timer	1 second to 160 hours
Orbit	2.5 mm (0.098")
Controls	Auto/Standby/On Rocker Switch, LED Displays for Speed/Time, Up/Down Buttons for Set-Point Control Pulse Button
Duty Rating	Intermittent duty
Dimensions (L x W x H)	21.1 x 12.2 x 16.5 cm (8.3" x 4.8" x 6.5")
Ship Weight	4.5 kg (10 lbs)

\* Maximum speed will vary depending on accessory used.



# Mini Vortex Mixer Accessories

## Micro-Tube Holder

Mixes (48) 0.25 to 2 mL micro-tubes.  
Requires Insert Retainer.

Description	Item Number
Micro-Tube Holder (2 pack)	30400232
Insert Retainer	30400227



## Microplate Holder

Ideal for mixing 96-well plates or deep well blocks.  
Requires Insert Retainer.

Description	Item Number
Microplate Holder (2 pack)	30400233
Insert Retainer	30400227



## 9 to 13 mm Tube Holder

Ideal for mixing 5 mL culture tubes and micro-vials. Requires Insert Retainer.

Description	Item Number
9 to 13 mm Tube Holder (2 pack)	30400229
Insert Retainer	30400227



## Flat Foam Insert

Ideal for custom applications. Can be cut or drilled to fit your specifications. Requires Insert Retainer.

Description	Item Number
Flat Foam Insert (2 pack)	30400234
Insert Retainer	30400227



## 14 to 19 mm Tube Holder

Ideal for mixing up to (8) 15 mL centrifuge tubes. Requires Insert Retainer.

Description	Item Number
14 to 19 mm Tube Holder (2 pack)	30400230
Insert Retainer	30400227



## Ampule Tube Holder

Mixes up to 4 storage vials and test tubes.

Description	Item Number
15 to 17 mm Ampule Tube Holder	30400207
10 to 17 mm Ampule Tube Holder	30400208



## 20 to 25 mm Tube Holder

Ideal for mixing up to (8) 50 mL centrifuge tubes. Requires Insert Retainer

Description	Item Number
20 to 25 mm Tube Holder (2 pack)	30400231
Insert Retainer	30400227



## Stainless Steel Microtube Holder

Mixes up to (12) 1.5 to 5 mL tubes.  
Stainless steel construction.

Description	Item Number
Microtube Holder	30400206



## Vessel Harness

Mixes Erlenmeyer flasks and media bottles.  
Requires Insert Retainer.

Description	Item Number
Vessel Harness (2 pack)	30400228
Insert Retainer	30400227



## Micro-Tube and Microplate Holder Kit

Includes:

- 1 Micro-Tube Holder
- 1 Microplate Holder
- 1 Insert Retainer

Description	Item Number
Micro-Tube & Microplate Holder Kit	30400198



## Cup Head

Designed for mixing 1 tube at a time.

Description	Item Number
Cup Head	30400235



## Tube Holder Kit

Includes:

- (1) 9 to 13 mm Tube Holder
- (1) 14 to 19 mm Tube Holder
- (1) 20 to 25 mm Tube Holder
- 1 Flat Foam Insert
- 2 Vessel Harnesses
- 1 Insert Retainer

Description	Item Number
Tube Holder Kit	30400197



## 3" Rubber Head Cover and 3" Head

Designed for mixing irregular shaped objects.

Description	Item Number
7.6 cm (3") Rubber Head Cover	30400237
7.6 cm (3") Rubber Head	30400236
8 cm (3") Head with Rubber Cover	30400196



OHAUS Vortex Mixer accessories are interchangeable with other manufacturers' models. Call 1-800-672-7722 for assistance.

## Mini Vortex Mixer Accessories

### Single Tube Holder

Single tube, hands free mixing. Easily attaches to the top of any Vortex Mixer with the use of a strong magnetic base. Accepts tubes from 6.4 to 11.4 cm (2.5 to 4.5") in length. Minimum tube diameter of 19 mm (0.75").



Description	Item Number
Single Tube Holder	30400202

### Adapter for Vortex-Genie® Mixer\*

Adapter plate easily adheres to the Vortex-Genie® Mixer housing so Single Tube Holder (sold separately) can be attached.



Description	Item Number
Adapter plate	30400203

\* The Vortex-Genie® Mixer is a registered trademark of Scientific Industries, Inc.

### Single Tube Holder Accessories

(Requires Single Tube Holder)

#### 0.5 mL Micro-Tube Holder

Mixes (24) 0.5 mL micro-tubes.  
For use with Single Tube Holder.



Description	Item Number
Micro-Tube Holder (0.5 mL)	30400204

#### 1.5 mL to 2.0 mL Micro-Tube Holder

Mixes (18) 1.5 to 2 mL micro-tubes.  
For use with Single Tube Holder.



Description	Item Number
Microtube Holder (1.5 mL to 2.0 mL)	30400205



## Heavy-Duty Vortex Mixers



Heavy-Duty Vortex Mixers feature a heavy-duty design and efficient motor to permit continuous duty operation, and the ability to handle accessory components over the entire speed range. Analog variable speed models or microprocessor-controlled digital models offer exact speed control when applications demand repeatable results. A wide range of accessories are available for microtubes, microplates and a variety of tube sizes from 0.5 to 50 ml.

- Accessory Adapter's Unique Mode of Attachment Allows for Secure Mixing
- Touchpad Control & Independent LED Displays for Speed/Time on Digital Models
- Variable Speed Analog Model Offers an Economical Alternative to Digital Model

# Heavy-Duty Vortex Mixers



- Designed for continuous duty
- LED displays for speed and time
- Includes foam insert for 1.5 mL to 2.0 mL microtubes

The OHAUS Digital Heavy-Duty Vortex Mixer is ideal for applications that demand repeatable results. Mixer features touchpad controls and LED displays for accurate speed (rpm) and time (minutes and seconds) results. The heavy-duty design and efficient motor allow this mixer to operate in continuous duty and handle all accessories over the entire speed range. Choose from two modes of operation: "Touch" mode for mixing tubes when cup head or Universal Holder with cover is depressed, or "On" mode when using any of the accessory attachments for continuous operation. Microprocessor control maintains set speed for strong, consistent mixing action. Timer will display elapsed time or, when programmed to user defined time limits, the unit will shut off when time reaches zero.

### Operating Features:

**Microprocessor Control:** The variable speed microprocessor control provides consistent uniform mixing action.

**LED Display:** Touch pad controls with easy-to-read, independent LED displays for speed and time allow operator to view both settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

### Operating Conditions:

Unit can be run in conditions from 4 to 40°C (39 to 104°F), 20% to 85% relative humidity, non-condensing.

### Ordering Information:

Mixer includes a cup head, universal holder with cover, foam microtube insert for (38) 1.5 to 2.0 mL microtubes, and a detachable, 3-wire cord and specified plug. Additional accessories can be found on page 60.

### Specifications

Speed Range	On Mode Touch Mode	300 to 2500 rpm 300 to 3500 rpm
Timer		1 second to 160 hours
Orbit		4.9 mm (0.19")
Controls		Touch/Standby/On Rocker Switch, LED Displays for Speed/Time, Up/Down Buttons for Set-Point Control
Capacity		1.1 kg (2.5 lbs)
Duty Rating		Continuous duty
Dimensions (L x W x H)		24.1 x 16.8 x 16 cm (9.5 x 6.6 x 6.3")
Ship Weight		6.8 kg (15 lbs)

### This product includes:

Description	Item Number
Cup Head	30400210
Universal Holder	30400226
Universal Holder Cover	30400225
Foam Insert (1.5 to 2.0 microtubes)	30400217



Description	Model	Item Number	Country Code
Digital Heavy Duty Vortex Mixer	VXHDDG	30392136	VN, MY, SG, ID, IN
Digital Heavy Duty Vortex Mixer	VXHDDG	30392137	AU, NZ
Digital Heavy Duty Vortex Mixer	VXHDDG	30392139	TH, PH

## Heavy-Duty Vortex Mixers



- Designed for continuous duty
- Includes foam insert for 1.5 mL to 2.0 mL microtubes
- Heavy-duty design

The OHAUS Analog Heavy-Duty Vortex Mixer is a variable speed analog mixer that is designed for continuous duty. The heavy-duty design and efficient motor allow this mixer to operate in continuous duty and handle all accessories over the entire speed range. Choose from two modes of operation: “Touch” mode for mixing tubes when cup head or Universal Holder with cover is depressed, or “On” mode when using any of the accessory attachments for continuous operation.

### Operating Conditions:

Unit can be run in conditions from 4 to 40°C (39 to 104°F), 20% to 85% relative humidity, non-condensing.

### Ordering Information:

Mixer includes a cup head, universal holder with cover, foam microtube insert for (38) 1.5 to 2.0 mL microtubes, and a detachable, 3-wire cord and specified plug. Additional accessories can be found on page 60.

### This product includes:

Description	Item Number
Cup Head	30400210
Universal Holder	30400226
Universal Holder Cover	30400225
Foam Insert (1.5 to 2.0 microtubes)	30400217



### Specifications

Speed Range	On Mode Touch Mode	300 to 2500 rpm 300 to 3500 rpm
Orbit		4.9 mm (0.19")
Controls		Analog
Capacity		1.1 kg (2.5 lbs)
Duty Rating		Continuous duty
Dimensions (L x W x H)		24.1 x 16.8 x 16 cm (9.5 x 6.6 x 6.3")
Ship Weight		6.8 kg (15 lbs)

Description	Model	Item Number	Country Code
Analog Heavy Duty Vortex Mixer	VXHDAL	30392141	VN, MY, SG, ID, IN
Analog Heavy Duty Vortex Mixer	VXHDAL	30392142	AU, NZ
Analog Heavy Duty Vortex Mixer	VXHDAL	30392144	TH, PH

## Microplate Vortex Mixers



Microplate Vortex Mixers are designed specifically for continuous duty throughout the speed range. Analog variable speed models or microprocessor-controlled digital models offer exact speed control for applications that demand repeatable results. The high-speed and small orbit of these mixers make them optimal for effectively mixing microplates. Cup head for mixing single tubes is also included.

- Microplate Adapter's Unique Mode of Attachment Allows for Secure Mixing
- Touchpad Control & Independent LED Displays for Speed/Time on Digital Models
- Variable Speed Analog Model Offers an Economical Alternative to Digital Model

# Microplate Vortex Mixers



- Designed for continuous duty
- Designed for shaking microplates or tubes
- LED displays for speed and time

The OHAUS Digital Microplate Vortex Mixer is ideal for applications that demand repeatable results. Mixer features touchpad controls and LED displays for accurate speed (rpm) and time (minutes and seconds) results. Microprocessor control maintains set speed for strong, consistent mixing action. Timer will display elapsed time or, when programmed to a user defined time limit, the unit will shut off when time reaches zero. Choose from two modes of operation: “Touch” mode which activates mixing when cup head is depressed, or “On” mode when using the microplate attachments for continuous operation.

### Operating Features:

**Microprocessor Control:** The variable speed microprocessor control provides consistent uniform mixing action.

**LED Display:** Touch pad controls with easy-to-read, independent LED displays for speed and time allow operator to view both settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

### Operating Conditions:

Unit can be run in conditions from 4 to 40°C (39 to 104°F), 20% to 85% relative humidity, non-condensing.

### Ordering Information:

Mixer includes a cup head, single microplate holder, and a detachable, 3-wire cord and specified plug. Accessories that can be used on the Microplate Vortex Mixer are cup head, single microplate holder and double microplate holder. Additional accessories can be found on page 60.



Specifications		
Speed Range	On Mode	300 to 2500 rpm
	Touch Mode	300 to 3500 rpm
Timer		1 second to 160 hours
Orbit		3.5 mm (0.13")
Controls		Touch/Standby/On Rocker Switch, LED Displays for Speed/Time, Up/Down Buttons for Set-Point Control
Capacity		2 microplates
Duty Rating		Continuous duty
Dimensions (L x W x H)		26.7 x 13.7 x 11.4 cm (10.5 x 5.4 x 4.5")
Ship Weight		5.4 kg (12 lbs)

### This product includes:

Description	Item Number
Cup Head	30400210
Microplate Holder (Single)	30400215



Description	Model	Item Number	Country Code
Digital Microplate Vortex Mixer	VXMPDG	30392150	VN, MY, SG, ID, IN
Digital Microplate Vortex Mixer	VXMPDG	30392151	AU, NZ
Digital Microplate Vortex Mixer	VXMPDG	30392153	TH, PH

# Microplate Vortex Mixers



CE

- Designed for continuous duty
- Designed for shaking microplates or tubes
- Optional double microplate holder available

The OHAUS Analog Microplate Vortex Mixer is a variable speed analog mixer that is designed for continuous duty. The high speed and small orbit is optimal for effectively mixing microplates. Choose from two modes of operation: "Touch" mode which activates mixing when cup head is depressed, or "On" mode when using the microplate attachments for continuous operation.

#### Operating Conditions:

Unit can be run in conditions from 4 to 40°C (39 to 104°F), 20% to 85% relative humidity, non-condensing.

#### Ordering Information:

Mixer includes a cup head, single microplate holder, and a detachable, 3-wire cord and specified plug. Accessories that can be used on the Microplate Vortex Mixer are cup head, single microplate holder and double microplate holder. Additional accessories can be found on page 60.

#### Specifications

Speed Range	On Mode Touch Mode	300 to 2500 rpm 300 to 3500 rpm
Orbit		3.5 mm (0.13")
Controls		Analog
Capacity		2 microplates
Duty Rating		Continuous duty
Dimensions L x W x H)		26.7 x 13.7 x 11.4 cm (10.5 x 5.4 x 4.5")
Ship Weight		5.4 kg (12 lbs)

#### This product includes:

Description	Item Number
Cup Head	30400210
Microplate Holder (Single)	30400215



Description	Model	Item Number	Country Code
Analog Microplate Vortex Mixer	VXMPAL	30392155	VN, MY, SG, ID, IN
Analog Microplate Vortex Mixer	VXMPAL	30392156	AU, NZ
Analog Microplate Vortex Mixer	VXMPAL	30392158	TH, PH

# Microplate Vortex Mixer Accessories

## Foam Insert for 0.5 mL Microtubes

Foam insert holds (52) 0.5 mL microtubes.  
Requires Universal Holder.

Description	Item Number
0.5 mL microtubes	30400216
Universal Holder	30400226



## Foam Insert for 1.5 to 2.0 mL Microtubes

Foam insert holds (38) 1.5 to 2.0 mL microtubes.  
Requires Universal Holder.

Description	Item Number
1.5 to 2.0 mL microtubes	30400217
Universal Holder	30400226



## Foam Insert for 12-13 mm Test Tubes

Foam insert holds (34) 12-13 mm diameter test tubes.  
Requires Universal Holder.

Description	Item Number
12-13 mm test tubes	30400220
Universal Holder	30400226



## Foam Insert for 15-18 mm Test Tubes

Foam insert holds (20) 15-18 mm diameter test tubes.  
Ideal for 15 mL centrifuge tubes.  
Requires Universal Holder.

Description	Item Number
15-18 mm test tubes	30400221
Universal Holder	30400226



## Foam Insert for 19-21 mm Test Tubes

Foam insert holds (18) 19-21 mm diameter test tubes.  
Requires Universal Holder.

Description	Item Number
19-21 mm test tubes	30400222
Universal Holder	30400226



## Foam Insert for 22-25 mm Test Tubes

Foam insert holds (13) 22-25 mm diameter test tubes.  
Requires Universal Holder.

Description	Item Number
22-25 mm test tubes	30400223
Universal Holder	30400226



## Foam Insert for 26-29 mm Test Tubes

Foam insert holds (4) 26-29 mm diameter test tubes. Ideal for 50 mL centrifuge tubes. Requires Universal Holder.

Description	Item Number
26-29 mm test tubes	30400224
Universal Holder	30400226



## Cup Head\*

Designed for mixing 1 tube at a time.

Description	Item Number
Cup Head	30400210



## Small Vessel Holder

Rubber holder secures 125 and 250 mL Erlenmeyer flasks.  
Vessel holder also includes a grip mat.  
Requires Universal Holder.

Description	Item Number
Small Vessel Holder	30400218
Universal Holder	30400226



## Large Vessel Holder

Rubber holder secures 500 and 1000 mL Erlenmeyer flasks.  
Vessel holder also includes a grip mat.  
Requires Universal Holder.

Description	Item Number
Large Vessel Holder	30400211
Universal Holder	30400226



## Microplate Holder (Single)\*

Designed to hold one standard microplate.

Description	Item Number
Single Holder	30400215



## Microplate Holder (Double)\*

Designed to hold two standard microplates.

Description	Item Number
Double Holder	30400213



## Microplate Holder (Quad)

Designed to hold four standard microplates.

Description	Item Number
Quad Holder	30400214



## Stackable Microplate Holder Four

Designed to maximize the capacity of the Heavy-Duty Vortex Mixer to eight microplates by stacking the tray on top of the four plate holder.

Description	Item Number
Stackable Holder	30400212



## Flat Foam Insert

Ideal for custom applications. Can be cut or drilled to fit your specifications. Requires Universal Holder.

Description	Item Number
Flat Foam Insert	30400209
Universal Holder	30400226



## Universal Holder & Cover

Replacement for items supplied with Heavy-Duty Vortex Mixer. Cover allows for mixing irregularly shaped objects.

Description	Item Number
Universal Holder	30400226
Universal Holder Cover	30400225



\*Unless noted with an asterisk (\*), for use on Heavy-Duty Vortex only.

## Multi-Tube Vortex Mixers



Multi-Tube Vortexers are ideal for high throughput sample processing. Interchangeable foam racks for vortexing tubes from 10 to 29 mm in diameter available. Vortexing action is created by securing the top of the sample in place while allowing the bottom to rotate freely in a 3.6 mm orbit. Suction cup feet reduce motion and prevent sliding on work surface. Analog & digital models, both microprocessor-controlled and run in continuous or timed mode.

- Digital Models Ideal for Applications that Require Accuracy and Repeatability
- Pulsing Mode on Digital Models to Enhance Vortexing Action
- Analog Model Offers an Economical Alternative When Exact Speed/Time Not Required

## Multi-Tube Vortex Mixers

- Process up to 50 samples at a time
- Continuous or timed operation
- Includes foam rack for 12 mm tubes

Conveniently angled front panel features rocker switch for run, time and standby modes.

### Operating Features:

One piece, stainless steel housing design optimizes clean-ups. Ideal for applications requiring accuracy and repeatability. The stainless steel one piece housing design is conducive to keeping your vortexer clean and free from contaminants.

**Microprocessor Control:** The variable speed microprocessor control provides consistent uniform mixing action.

**Adjustment Knobs:** Basic speed and time knobs with 1 to 10 dial markings.

### Operating Conditions:

Unit can be run in conditions from 4 to 40°C (39 to 104°F), 20% to 85% relative humidity, non-condensing.

### Applications:

Suspensions, high throughput testing in clinical, environmental, and chemistry labs.

### Ordering Information:

Unit includes a detachable, 3-wire cord and plug. Unit is also supplied with a Tray Pad Set for support and one 12 mm Test Tube Foam Rack (30400239). Additional accessories can be found on page 64.



### Specifications

Speed Range*	1200 to 2400 rpm
Timer	0 to 60 seconds
Orbit	3.6 mm (0.14")
Maximum Weight Capacity	4.5 kg (10 lbs)
Duty Rating	Continuous duty
Tray Dimensions (L x W)	18.4 x 31.1 cm (7.25 x 12.25")
Overall Dimensions (L x W x H)	24.1 x 38.4 x 40.6 cm (9.5 x 15.1 x 16")
Ship Weight	19.1 kg (42 lbs)

\* Maximum speed will vary depending on load.

Description	Model	Item Number	Country Code
Analog Multi-Tube Vortexer	VXMTAL	30392166	VN, MY, SG, ID, IN
Analog Multi-Tube Vortexer	VXMTAL	30392167	AU, NZ
Analog Multi-Tube Vortexer	VXMTAL	30392169	TH, PH

# Multi-Tube Vortex Mixers



- Process up to 50 samples at a time
- LED displays for speed and time
- Pulsing mode

Ideal for applications requiring accuracy and repeatability.

### Operating Features:

One piece, stainless steel housing design optimizes clean-ups. Ideal for applications requiring accuracy and repeatability. The stainless steel one piece housing design is conducive to keeping your vortexer clean and free from contaminants.

**Microprocessor Control:** The variable speed microprocessor control provides consistent uniform mixing action.

**LED Display:** Touch pad controls with easy-to-read, independent LED displays for speed and time allow operator to view both settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**Pulsing Mode:** Programmable pulsing mode allows user to adjust the pulse-on and pulse-off times between 1 and 59 seconds in 1 second intervals. This feature enhances the vortex action by creating a more vigorous mix.

### Operating Conditions:

Unit can be run in conditions from 4 to 40°C (39 to 104°F), 20% to 85% relative humidity, non-condensing.

### Applications:

Suspensions, high throughput testing in clinical, environmental, and chemistry labs.

### Ordering Information:

Unit includes a detachable, 3-wire cord and plug. Unit is also supplied with a Tray Pad Set for support and one 12 mm Test Tube Foam Rack (30400239). Additional accessories can be found on page 64.

### Specifications

Speed Range*	500 to 2500 rpm
Speed Accuracy	± 25 rpm
Timer	1 second to 160 hours
Orbit	3.6 mm (0.14")
Maximum Weight Capacity	4.5 kg (10 lbs)
Duty Rating	Continuous duty
Tray Dimensions (L x W)	18.4 x 31.1 cm (7.25 x 12.25")
Overall Dimensions (L x W x H)	24.1 x 38.4 x 40.6 cm (9.5 x 15.1 x 16")
Ship Weight	19.1 kg (42 lbs)

\* Maximum speed will vary depending on load.

Description	Model	Item Number	Country Code
Digital Multi-Tube Vortexer	VXMTDG	30392173	VN, MY, SG, ID, IN
Digital Multi-Tube Vortexer	VXMTDG	30392174	AU, NZ
Digital Multi-Tube Vortexer	VXMTDG	30392176	TH, PH

## Multi-Tube Vortexer Accessories

### Foam Test Tube Racks

Description	Tube Capacity	Color	Dimensions (L x W x H)	Item Number
10 mm Test Tube Foam Rack	50	Gray	14 x 24.1 x 5.1 cm (5.5 x 9.5 x 2")	30400238
12 mm Test Tube Foam Rack	50	Blue	14 x 24.1 x 5.1 cm (5.5 x 9.5 x 2")	30400239
13 mm Test Tube Foam Rack	50	Yellow	14 x 24.1 x 5.1 cm (5.5 x 9.5 x 2")	30400240
16 mm Test Tube Foam Rack (for 15 mL centrifuge tubes)	50	Green	14 x 24.1 x 5.1 cm (5.5 x 9.5 x 2")	30400241
25 mm Test Tube Foam Rack	28	White	14 x 24.1 x 5.1 cm (5.5 x 9.5 x 2")	30400243
29 mm Test Tube Foam Rack (for 50 mL centrifuge tubes)	15	Red	14 x 24.1 x 5.1 cm (5.5 x 9.5 x 2")	30400242
Replacement Tray Pad Set (upper & lower)	N/A	Gray	17.8 x 30.5 x 2.5 cm (7 x 12 x 1")	30400245



### Post Extension Kit

Adds 15.2 cm (6") to the post of the Multi-Tube Vortex Mixer to accommodate tubes up to 25.4 cm (10") tall.

Description	Item Number
Post Extension Kit	30400244



# Dry Block Heaters





## Dry Block Heaters

Dry Block Heaters  
2 Block Dry Block Heaters with Lid

## Dry Block Heaters



Multi-purpose Dry Block Heaters are ideal for applications that require temperature stability. The close tube-to-block contact enables maximum heat retention, resulting in efficient heating. High-wattage, constant-temp. analog models are an economical option, while digital models offer exceptional temp. uniformity & stability for applications that require repeatable results. Units hold optional interchangeable modular blocks with over 40 options.

- Delivering Exceptional Temperature Stability and Uniformity
- Accurate and Fast Sample Heating with PID Microprocessor Temperature Control (Digital models)
- Digital Models can be Calibrated to an External Temperature Device

# Dry Block Heaters



- Exceptional temperature uniformity and stability
- Optional external temperature probe
- Holds interchangeable modular blocks

Designed for applications that require repeatable results and superior temperature stability. These multi-purpose units are ideal for incubation and activation of cultures, enzyme reactions, immunoassays, melting/boiling points, and a wide variety of other laboratory procedures. Integral support rod holder with locking knob accepts optional External Temperature Probe Kit. Optional External Temperature Probe Kit monitors actual block or sample temperature. Each of the five models accepts separate interchangeable modular blocks, accommodating various tube sizes from 0.2 mL micro-tubes to 50 mL centrifuge tubes. Each block has a thermometer well for measuring block temperature. Efficient heating due to close tube-and-block contact for maximum heat retention. Heaters require OHAUS modular heating blocks for operation. Modular blocks are sold separately (see pages 73–75).

### Operating Features:

**Microprocessor Control:** PID temperature control, with optional external RTD probe, offers a temperature stability as low as  $\pm 0.1^\circ\text{C}$  with a temperature uniformity as low as  $\pm 0.1^\circ\text{C}$ . Samples are heated to temperature quickly and accurately. Temperature is adjusted in  $\pm 0.1^\circ\text{C}$  increments.

**LED Display:** Touch pad controls with easy-to-read, independent LED displays for temperature, and time. Provides repeatable and accurate results every time and is easily visible across lab benches. Shows set-point and actual temperature. Timer will display elapsed time or, when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**Temperature Calibration Mode:** Allows user to calibrate unit to an external temperature device.



### Safety Features:

**Caution Hot Indicator:** Hot warning symbol light is illuminated when the temperature is above  $40^\circ\text{C}$ .

**Overshoot Protection:** If the unit exceeds the set temperature by  $10^\circ\text{C}$  the unit will automatically stop heating.

**Audible Alarm:** In timed mode, alarm will sound when time reaches zero and when unit reaches set-point temperature.

**CAUTION!** To avoid possible electrical hazard, do not fill well or block opening with water or other fluids. Unit is designed as a dry bath/incubator.

### Operating Conditions:

Units can be run in conditions from 18 to  $33^\circ\text{C}$  ( $64$  to  $91^\circ\text{F}$ ), 20% to 80% relative humidity, non-condensing.

### Applications:

Denaturing proteins, DNA applications, ELISA and other immunoassay studies.

### Ordering Information:

Units include a detachable, 3-wire cord and plug. Modular blocks are sold separately (see pages 73-75).

Size	Temperature Range	Temperature Stability @ $37^\circ\text{C}$	Uniformity Within the Block @ $37^\circ\text{C}$	Uniformity Across Similar Blocks @ $37^\circ\text{C}$	Temperature Stability @ $60^\circ\text{C}$	Uniformity Within the Block @ $60^\circ\text{C}$	Uniformity Across Similar Blocks @ $60^\circ\text{C}$	Heat-Up Time to $100^\circ\text{C}$
1 block	Ambient $+5^\circ\text{C}$ to $120^\circ\text{C}$	120 volt units: $\pm 0.1^\circ\text{C}$ 230 volt units: $\pm 0.2^\circ\text{C}$	120 volt units: $\pm 0.1^\circ\text{C}$ 230 volt units: $\pm 0.2^\circ\text{C}$	N/A	$\pm 0.4^\circ\text{C}$	$\pm 0.4^\circ\text{C}$	N/A	16 minutes
2 block				$\pm 0.1^\circ\text{C}$			$\pm 0.5^\circ\text{C}$	16 minutes
4 block				$\pm 0.2^\circ\text{C}$			$\pm 0.8^\circ\text{C}$	23 minutes
6 block				$\pm 0.3^\circ\text{C}$			$\pm 1^\circ\text{C}$	30 minutes

# Dry Block Heaters

## Advanced Dry Block Heaters

Block Capacity	Dimensions (L x W x H)	Model	Item Number	Item Number
1	31.5 x 20.3 x 8.9 cm (12.4 x 8 x 3.5")	HB1DG	30392061	VN, MY, SG, ID, IN
1	31.5 x 20.3 x 8.9 cm (12.4 x 8 x 3.5")	HB1DG	30392062	AU, NZ
1	31.5 x 20.3 x 8.9 cm (12.4 x 8 x 3.5")	HB1DG	30392064	TH, PH
2	39.1 x 20.3 x 8.9 cm (15.4 x 8 x 3.5")	HB2DG	30392082	VN, MY, SG, ID, IN
2	39.1 x 20.3 x 8.9 cm (15.4 x 8 x 3.5")	HB2DG	30392083	AU, NZ
2	39.1 x 20.3 x 8.9 cm (15.4 x 8 x 3.5")	HB2DG	30392085	TH, PH
4	42.9 x 20.3 x 8.9 cm (16.9 x 8 x 3.5")	HB4DG	30392089	VN, MY, SG, ID, IN
4	42.9 x 20.3 x 8.9 cm (16.9 x 8 x 3.5")	HB4DG	30392090	AU, NZ
4	42.9 x 20.3 x 8.9 cm (16.9 x 8 x 3.5")	HB4DG	30392092	TH, PH
6	53.1 x 20.3 x 8.9 cm (20.9 x 8 x 3.5")	HB6DG	30392096	VN, MY, SG, ID, IN
6	53.1 x 20.3 x 8.9 cm (20.9 x 8 x 3.5")	HB6DG	30392097	AU, NZ
6	53.1 x 20.3 x 8.9 cm (20.9 x 8 x 3.5")	HB6DG	30392099	TH, PH

## External Temperature Probe Kit

Enables the unit to read actual block or sample temperature and display that temperature on the control panel. The optional External Temperature Probe Kit includes a stainless steel RTD PT100 probe, 45.7 cm (18") stainless steel support rod, thermometer/temperature probe extension clamp and hook connector. The PT100 RTD probe is designed to fit perfectly in to the thermometer well of each modular block.



Description	Item Number
Optional External Temperature Probe Kit	30400246



# Dry Block Heaters



- Multi-purpose use
- Holds interchangeable modular blocks
- Analog controls

High wattage, constant-temperature Dry Block Heaters are economical, versatile and compact. These multi-purpose units are ideal for incubation and activation of cultures, enzyme reactions, immunoassays, melting/boiling points and a wide variety of other laboratory procedures. Each of the five models accept separate interchangeable modular blocks, accommodating various sample enclosures such as micro-tubes, centrifuge tubes, vials, microplates, and PCR strips or tubes. Each block has a thermometer well for measuring block temperature. Anodized aluminum modular blocks provide superior temperature stability and heat transfer. Heaters require OHAUS modular heating blocks for operation. Modular blocks are sold separately (see pages 73-75).



### Operating Features:

High wattage, constant-temperature Dry Block Heaters are economical, versatile and compact.

**Microprocessor Control:** PID temperature controller maintains precise temperature control. Samples are heated to temperature quickly and accurately.

**Adjustment Knobs:** Dual temperature control knobs with dial markings from 1 to 10 for low temperature and high temperature adjustments. Low range knob adjusts from ambient to 100°C and high range knob adjusts from 75°C to 150°C.

**CAUTION!** To avoid possible electrical hazard, do not fill well or block opening with water or other fluids. Unit is designed as a dry bath/incubator.

### Operating Conditions:

Units can be run in conditions from 18 to 33°C (64 to 91°F), 20% to 80% relative humidity, non-condensing.

### Applications:

Coagulation and RH Studies.

### Ordering Information:

Units include a detachable, 3-wire cord and plug. Modular blocks are sold separately (see pages 73-75).

Size	Temperature Range	Uniformity Within the Block @ 37°C	Temperature Stability @ 37°C	Uniformity Across Similar Blocks @ 37°C	Uniformity Within the Block @ 60°C	Temperature Stability @ 60°C	Uniformity Across Similar Blocks @ 60°C	Heat-Up Time to 100°C
1 block	Low Range: Ambient +5°C to 100°C High Range: 75°C to 150°C	120 volt units: ± 0.1°C 230 volt units: ± 0.4°C	120 volt units: ± 1.0°C 230 volt units: ± 1.5°C	N/A	+/- 0.6°C	+/- 3°C	N/A	16 minutes
2 block			120 volt units: ± 1.5°C 230 volt units: ± 2.0°C	± 0.1°C		+/- 4°C	± 0.8°C	16 minutes
4 block			120 volt units: ± 2.0°C 230 volt units: ± 2.5°C	± 0.2°C		+/- 5°C	± 1.2°C	23 minutes
6 block			± 0.3°C	+/- 5°C		± 1.4°C	30 minutes	

# Dry Block Heaters

## Standard Dry Block Heaters

Block Capacity	Dimensions (L × W × H)	Model	Item Number	Country Code
1	31.5 × 20.3 × 8.9 cm (12.4 × 8 × 3.5")	HB1AL	30392047	VN, MY, SG, ID, IN
1	31.5 × 20.3 × 8.9 cm (12.4 × 8 × 3.5")	HB1AL	30392048	AU, NZ
1	31.5 × 20.3 × 8.9 cm (12.4 × 8 × 3.5")	HB1AL	30392050	TH, PH
2	39.1 × 20.3 × 8.9 cm (15.4 × 8 × 3.5")	HB2AL	30392054	VN, MY, SG, ID, IN
2	39.1 × 20.3 × 8.9 cm (15.4 × 8 × 3.5")	HB2AL	30392055	AU, NZ
2	39.1 × 20.3 × 8.9 cm (15.4 × 8 × 3.5")	HB2AL	30392057	TH, PH
4	42.9 × 20.3 × 8.9 cm (16.9 × 8 × 3.5")	HB4AL	30392068	VN, MY, SG, ID, IN
4	42.9 × 20.3 × 8.9 cm (16.9 × 8 × 3.5")	HB4AL	30392069	AU, NZ
4	42.9 × 20.3 × 8.9 cm (16.9 × 8 × 3.5")	HB4AL	30392071	TH, PH
6	53.1 × 20.3 × 8.9 cm (20.9 × 8 × 3.5")	HB6AL	30392075	VN, MY, SG, ID, IN
6	53.1 × 20.3 × 8.9 cm (20.9 × 8 × 3.5")	HB6AL	30392076	AU, NZ
6	53.1 × 20.3 × 8.9 cm (20.9 × 8 × 3.5")	HB6AL	30392078	TH, PH



## 2 Block Dry Block Heaters with Lid



Multi-purpose Dry Block Heaters are ideal for applications that require temperature stability. The close tube-to-block contact enables maximum heat retention, resulting in efficient heating. High-wattage, constant-temp. Analog models are an economical option, while digital models offer exceptional temp. uniformity & stability for applications that require repeatable results. Units hold optional interchangeable modular blocks with over 40 options.

- Delivering Exceptional Temperature Stability and Uniformity
- Heated Lid Model Reduces Condensation on Lids to Maintain Sample Integrity
- Calibrate to an External Temperature Device with Temperature Calibration Mode

## 2 Block Dry Block Heaters with Lid



- Exceptional uniformity, stability, and regulation of temperature
- Heated lid reduces condensation on sample lids
- Optional external temperature probe

OHAUS Digital Dry Block Heaters with Heated Lid are designed for applications that require repeatable results and superior temperature stability. These multi-purpose units are ideal for isothermal incubation, enzyme reactions, immunoassays, nucleic acid denaturation and a wide variety of other laboratory procedures. Integral support rod holder with locking knob accepts optional External Temperature Probe Kit. Optional External Temperature Probe Kit monitors actual block or sample temperature. Block heater accepts one microplate block or two separate interchangeable modular blocks, accommodating various tube sizes from 0.2 mL micro-tubes to test tubes or vials up to 85 mm in height. Each block has a thermometer well for measuring block temperature. Efficient heating due to close tube-and-block contact with a low density design for exceptional temperature uniformity. The heated lid helps to regulate the temperature and reduce the amount of condensation on sample lids. Heaters require OHAUS modular heating blocks for operation. Modular blocks are sold separately (see pages 73-75).

### Safety Features:

**Caution Hot Indicator:** Hot warning symbol light is illuminated when the temperature is above 40°C.

**Overshoot Protection:** If the unit exceeds the set temperature by 10°C the unit will automatically stop heating.

**Audible Alarm:** In timed mode, alarm will sound when time reaches zero and when unit reaches set-point temperature.

**CAUTION!** To avoid possible electrical hazard, do not fill well or block opening with water or other fluids. Unit is designed as a dry bath/incubator.

### Operating Conditions:

Units can be run in environments from 18 to 33°C (64 to 91°F), 20% to 80% relative humidity, non-condensing.

### Applications:

Isothermal incubation, enzyme reactions, immunoassays and nucleic acid denaturation and a wide variety of other laboratory procedures.

### Ordering Information:

Units include a detachable, 3-wire cord and plug. For optional temperature probe kits see page 68. Modular blocks sold separately (see pages 73-75).

### Operating Features:

**Microprocessor Control:** PID temperature control, with optional external RTD probe, offers a temperature stability as low as  $\pm 0.1^\circ\text{C}$  with a temperature uniformity as low as  $\pm 0.1^\circ\text{C}$ . Samples are heated to temperature quickly and accurately. Temperature is adjusted in  $\pm 0.1^\circ\text{C}$  increments.

**LED Display:** Touch pad controls with easy-to-read, independent LED displays for temperature, and time. Provides repeatable and accurate results every time and is easily visible across lab benches. Shows set-point and actual temperature. Timer will display elapsed time or, when programmed to user defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**Temperature Calibration Mode:** Allows user to calibrate unit to an external temperature device.

Size	Temperature Range	Temperature Stability @ 37°C	Uniformity Within the Block @ 37°C	Uniformity Across Similar Blocks @ 37°C	Temperature Stability @ 60°C	Uniformity Within the Block @ 60°C	Uniformity Across Similar Blocks @ 60°C	Heat-Up Time to 100°C
2 block	Ambient +5°C to 100°C	120 volt units: $\pm 0.1^\circ\text{C}$ 230 volt units: $\pm 0.2^\circ\text{C}$	$\pm 0.1^\circ\text{C}$	$\pm 0.1^\circ\text{C}$	$\pm 0.4^\circ\text{C}$	N/A	$\pm 0.5^\circ\text{C}$	30 minutes

Block Capacity	Dimensions (L x W x H)	Model	Item Number	Country Code
2	39.1 x 20.3 x 17.8 cm (15.4 x 8 x 7")	HB2DGH	30392103	VN, MY, SG, ID, IN
2	39.1 x 20.3 x 17.8 cm (15.4 x 8 x 7")	HB2DGH	30392104	AU, NZ
2	39.1 x 20.3 x 17.8 cm (15.4 x 8 x 7")	HB2DGH	30392106	TH, PH

# Modular Blocks & Accessories

Modular blocks are constructed from a solid anodized aluminum block\*. The close contact of tubes-to-block walls allow for maximum heat retention. Each block has a thermometer well for measuring block temperature.

**CAUTION!** To avoid possible electrical hazard, do not fill well or block with water or other fluids. Units are designed as a dry bath/incubator.

**Single block dimensions** (L × W × H): 9.5 × 7.6 × 5.1 cm (3.75 × 3 × 2")

**Double block dimensions** (L × W × H): 15.2 × 9.5 × 5.7 cm (6 × 3.75 × 2.25")

## Microcentrifuge Tube Blocks

Single block

Brand/Sample Type	No. of Wells	Well Dia.	Well Depth	Item Number
0.5 mL Tube	30	7.9 mm	27.6 mm	30400157
1.5 mL Tube	20	11.1 mm	39.1 mm	30400159
1.5 mL Eppendorf™ Tube	20	11.5 mm	36.9 mm	30400162
2 mL Eppendorf™ Tube	20	11.5 mm	38.1 mm	30400191
2 mL Corning™ Tube	20	10.9 mm	38.1 mm	30400192

## Titer Plate Block

Double block

Fits 2/4/6 block Dry Block Heaters. Ideal for 96-well or 384-well titer plates. Recessed well for better stability, flat surface good for flat and round bottom plates.

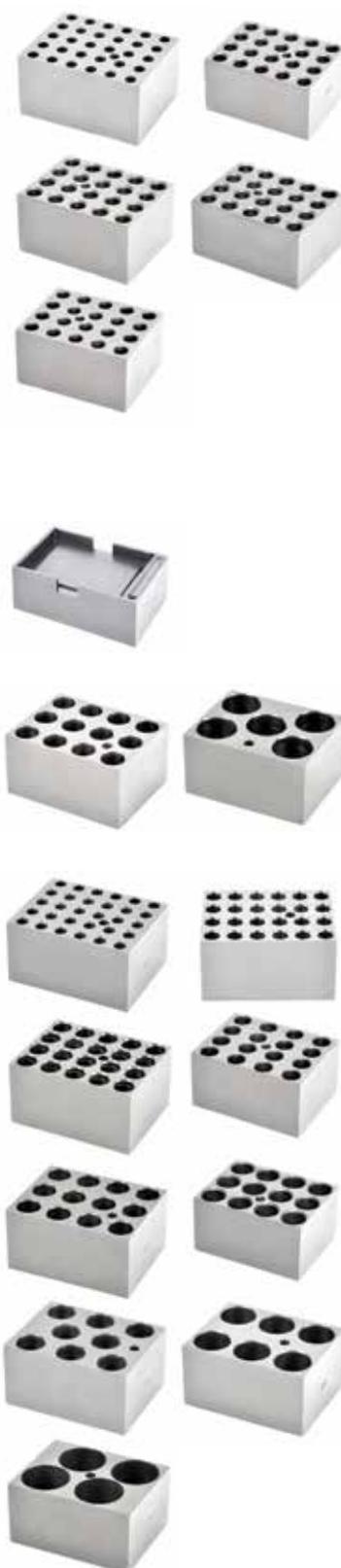
Sample Type	Well Depth	Item Number
Titer Plate	13.5 mm	30400164

## Conical-Bottom Centrifuge Tube Blocks

Single/Sample Type	No. of Wells	Well Dia.	Well Depth	Item Number
15 mL Tube	12	17.1 mm	44.5 mm	30400172
50 mL Tube	5	29.0 mm	47.6 mm	30400168

## Standard Test Tube Blocks

Single/Sample Type	No. of Wells	Well Dia.	Well Depth	Item Number
6 mm Tube	30	8.3 mm	48.4 mm	30400158
10 mm Tube	24	10.7 mm	48.4 mm	30400151
12/13 mm Tube	20	13.9 mm	48.4 mm	30400152
12/13 mm Tube	16	13.9 mm	48.4 mm	30400165
15/16 mm Tube	12	17.5 mm	48.4 mm	30400153
17/18 mm Tube	12	19.1 mm	48.4 mm	30400195
20 mm Tube	8	21.0 mm	48.4 mm	30400154
25 mm Tube	6	26.2 mm	48.4 mm	30400155
35 mm Tube	4	35.0 mm	47.6 mm	30400167



\* Block color subject to change

# Modular Blocks\* & Accessories

## Combination Blocks

### Single block

These blocks have been designed for variable sized samples.

Sample Type	No. of Wells	Well Dia.	Well Depth	Item Number
Test Tube Combination	6 mm	6	8.3 mm	30400156
	12/13 mm	5	13.8 mm	
	25 mm	3	26.2 mm	
Centrifuge Tube Combination	1.5 mL	4	11.1 mm	30400193
	15 mL	3	17.1 mm	
	50 mL	2	29.0 mm	
Micro-Tube Combination	0.5 mL	6	7.9 mm	30400194
	1.5 mL	10	11.1 mm	
	2 mL	5	11.5 mm	

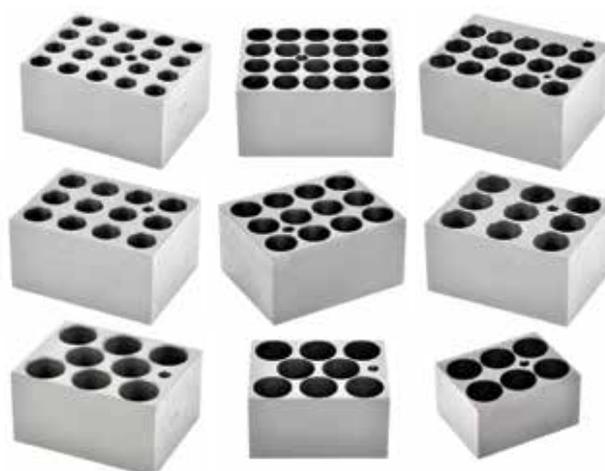


## Vial Blocks

### Single block

Designed for sample/serum and scintillation vials.

Sample Type	No. of Wells	Well Dia.	Well Depth	Item Number
12 mm Vial	20	12.7 mm	30 mm	30400182
15 mm Vial	20	15.8 mm	35 mm	30400183
16 mm Vial	15	16.4 mm	45 mm	30400190
17 mm Vial	12	17.8 mm	45 mm	30400184
19 mm Vial	12	19.7 mm	45 mm	30400185
21 mm Vial	9	21.7 mm	45 mm	30400186
23 mm Vial	8	23.8 mm	45 mm	30400187
25 mm Vial	8	25.8 mm	45 mm	30400188
28 mm Vial	6	28.8 mm	45 mm	30400189



## PCR—Plate, Tube, Strip Blocks

### Single and double block

Tapered tube wells for 0.2 mL tubes. Spaced for easy access and removal.

Sample Type	Block Size	No. of Wells	Well Dia.	Well Depth	Item Number
96-well PCR Plate	Double	96	6.4 mm	15.5 mm	30400171
10 × 8 Tube Strips	Single	80	6.4 mm	15.5 mm	30400169
Individual Tubes	Single	64	6.4 mm	20.2 mm	30400170



## Cuvette Block

### Single block

Two parallel slots fit 6 cuvettes in each slot, side-by-side.

Sample Type	No. of Wells	Well Depth	Item Number
(12) 12.5 mm Cuvettes	2	25.4 mm	30400161



\* Block color subject to change

# Modular Blocks\* & Accessories

## Solid Blocks

### Single and double block

For use as a low-temperature hotplate, slide drying, or for custom drilling to make a custom block.

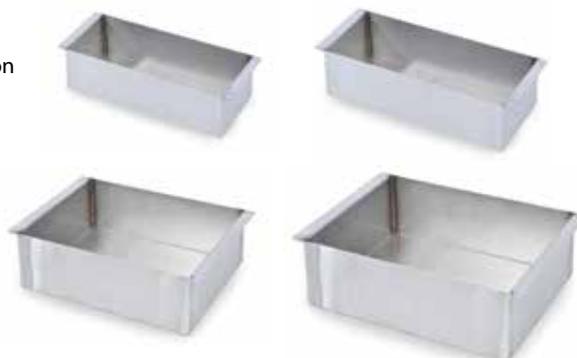
Block Size	Dimensions (L x W x H)	Item Number
Single	9.5 x 7.6 x 5.1 cm (3.75 x 3 x 2")	30400160
Double	15.2 x 9.5 x 5.7 cm (6 x 3.75 x 2.25")	30400166



## Stainless Steel Sand Baths

Ideal for irregular vessels. Stainless steel construction for superior corrosion resistance. Designed to hold sand, stainless steel shot or non-volatile fluids.

For Unit	Dimensions (L x W x H)	Item Number
1 Block Dry Block Heater	9.5 x 7.6 x 6.4 cm (3.8 x 3.0 x 2.5")	30400173
2 Block Dry Block Heater	9.5 x 14.9 x 6.4 cm (3.8 x 5.9 x 2.5")	30400174
4 Block Dry Block Heater	14.7 x 19.1 x 6.4 cm (5.8 x 7.5 x 2.5")	30400175
6 Block Dry Block Heater	14.7 x 28.7 x 6.4 cm (5.8 x 11.3 x 2.5")	30400176



Accessories	Item Number
Sand, 0.45 kg (1 lb)	30400177
Stainless Steel Shot, 0.45 kg (1 lb)	30400178

## Low Temperature Covers

Plexiglass cover reduces air flow for additional temperature stability in low-temperature applications. Two sides are open 6.4 mm (0.25").

Block Size	Dimensions (L x W x H)	Item Number
2 Block Cover	16.5 x 16.5 x 4.1 cm (6.5 x 6.5 x 1.6")	30400179
4 Block Cover	21.6 x 21.6 x 4.1 cm (8.5 x 8.5 x 1.6")	30400180
6 Block Cover	31.8 x 21.6 x 4.1 cm (12.5 x 8.5 x 1.6")	30400181



\* Block color subject to change





## Hotplates & Stirrers

Guardian 7000 Hotplate Stirrers

Guardian 5000 Hotplate Stirrers

Guardian7000  
HotplateStirrers

## Guardian 7000 Hotplate Stirrers



OHAUS Guardian 7000 Hotplate Stirrers are designed with outstanding safety features and superior heating and mixing performance. The SmartHousing™ is chemical resistant with an innovative, easy-to-clean design that channels spills away from internal components and the angled glass control panel. The bright LCD display includes intuitive icons, temperature, speed and time settings - all designed to monitor performance from across the lab.

- SmartPresence™ and SmartLink™ Technologies Ensure Supervised Operation
- SafetyHeat™ System Protects the Lab
- Powerful, Consistent Stirring Performance
- Customized Performance for Precise Applications

# Guardian 7000 Hotplate Stirrers



## Durable Hotplate Stirrers with Superior Safety Features and Intelligent Performance

### Unique Features:

**SmartPresence™ and SmartLink™ Technologies Ensure Supervised Operation:** Protect your lab with patented SmartPresence™ and SmartLink™ technologies. These exclusive features automatically shut off the heater if no one is detected after a user set “time out” period has passed.

**SafetyHeat™ System Protects the Lab:** An industry-leading early detection system that uses two independent safety controls to continuously monitor the electronics and shut off heating before an overtemperature condition occurs.

**Powerful, Consistent Stirring Performance:** Precise stirring from 60 to 1600 rpm is made possible by the design of a powerful motor, strong magnet and software controlled ramp rate, ensuring secure magnetic coupling for viscous applications.

**Customized Performance for Precise Applications:** SmartHeat™ allows you to set the maximum temperature of the unit and SmartRate™ enables fast or slow temperature and speed ramp rates. The programming feature allows storage of 5 multi-step programs.

### Other Features and Equipment:

Icons for SmartRate™, SmartHeat™, SmartPresence™, SmartLink™, green indicator lights when unit is heating and stirring, probe in use, USB port for programming of repeat applications, IP21 Ingress Protection, probe connection, hardened glass front panel, control knobs, On/Off switch for heater disconnect, built-in support rod holder, easy-to-clean ceramic or aluminum tops.

### Compliance:

**Product Safety:** IEC/EN 61010-1; IEC/EN 61010-2-010; IEC/EN 61010-2-051

**Electromagnetic Compatibility:** IEC/EN 61326-1 Class A, Basic Environments

**Compliance Marks:** CE; RCM; TÜV SÜD; WEEE



Model	e-G71HS07C	e-G71HS10C	e-G71HSRDM
Function	Heating and Stirring		
Speed Range	60 rpm to 1600 rpm		
Speed Stability	+/- 2 %		
Temperature Range	Ambient + 5 °C – 500 °C		Ambient + 5 °C – 380 °C
Temperature Stability*	+/- 1 % Plate, below 100 °C +/- 1 °C and +/- 0.5 % Probe, below 100 °C +/- 1 °C		
Temperature Accuracy*	Plate +/- 5 °C (after Single Point Calibration) and Probe +/- 0.5 °C (after Single Point Calibration)		
Temperature Calibration	Five Plate and Five Probe		
Timer	1 minute to 99 hours and 59 minutes		
Control	Digital		
Display	Custom Backlit LCD		
Communication	USB		
Capacity	15 L	18 L	20 L
Top Plate Material	Ceramic		Aluminum
Top Plate Size	17.8 x 17.8 cm	25.4 x 25.4 cm	13.5 cm diameter
Dimensions (H x L x W)	12.2 x 30.9 x 22.3 cm	12.2 x 41.5 x 28.6 cm	12.6 x 26.7 x 17.3 cm
Net Weight	2.6 kg	5.2 kg	2.6 kg
Power	120V, 10A, 50/60Hz 230V, 6.0A, 50/60Hz	120V, 11.2A, 50/60Hz 230V, 7A, 50/60Hz	120V, 8.3A, 50/60Hz 230V, 4.6A, 50/60Hz
Power Consumption	1080 W 1242W (230V)	1210 W 1449 (230V)	896 W 952 (230V)
Working Environment	5 °C – 40 °C, 80 % RH, non-condensing		
Accessories	Temperature Probe and In Use Cover (Included)		

\* Conditions permitting. Variations in temperature measurement process, vessel, ambient and sample will impact actual performance.

\*\*The Bluetooth word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by OHAUS is under license.

## Guardian 7000 Hotplate Stirrers Accessories

Item No.	Description	e-G71HS07C	e-G71HS10C	e-G71HSRDM
30500570	Base Plate, 135 mm			●
30500571	Handles for Base Plate			●
30500572	Sectional Block, 12 mm Vials			●
30500573	Sectional Block, 15 mm Vials			●
30500574	Sectional Block, 17 mm Vials			●
30500575	Sectional Block, 21 mm Vials			●
30500576	Sectional Block, 28 mm Vials			●
30500577	Sectional Block, 12 mm Test Tubes			●
30500578	Sectional Block, 16 mm Test Tubes			●
30500579	Sectional Block, 20 mm Test Tubes			●
30500580	Sectional Block, 25 mm Test Tubes			●
30500581	Uni Block, 12 mm Vials			●
30500582	Uni Block, 15 mm Vials			●
30500583	Uni Block, 17 mm Vials			●
30500584	Uni Block, 21 mm Vials			●
30500585	Uni Block, 28 mm Vials			●
30500586	Uni Block, 12 mm Test Tubes			●
30500587	Uni Block, 16 mm Test Tubes			●
30500588	Uni Block, 20 mm Test Tubes			●
30500589	Uni Block, 25 mm Test Tubes			●
30392233	Clamp, Specialty, Rod, CLS-RODS			●
30500590	Temperature Probe, 20 cm S/S	●	●	●
30500591	Temperature Probe, 20 cm PTFE	●	●	●
30500592	Temperature Probe, 25 cm S/S	●	●	●
30500593	Temperature Probe, 25 cm PTFE	●	●	●
30500594	In Use Cover Guardian, 17.8 x 17.8 cm	●		
30500595	In Use Cover Guardian, 25.4 x 25.4 cm		●	
30500596	In Use Cover Guardian, Round			●
30500597	Vessel Clamp	●	●	●
30500598	Stir Bar Retriever	●	●	●
30412537	Wireless Dongle MTICWD-200	●	●	●
30392314	Clamp, Specialty, Column, CLS-COLMNSS	●	●	●
30392315	Clamp, Specialty, Column, CLS-COLMNSM	●	●	●
30392316	Clamp, Specialty, Column, CLS-COLMNSL	●	●	●
30392317	Clamp, Specialty, Column, CLS-COLMNSX	●	●	●
30392318	Clamp, Specialty, Nester, CLS-NESTXS	●	●	●
30400145	Ultra Flex Support Kit	●	●	●
30400146	Support Rod And Clamp Kit	●	●	●
30400147	Spinbar, 2.5 cm PTFE	●	●	●
30400148	Spinbar, 3.8 cm PTFE	●	●	●
30400149	Spinbar, 7 cm PTFE	●	●	●
30400150	Spinbar, 10 cm with Pivot Ring PTFE	●	●	●

Guardian5000  
HotplateStirrers

## Guardian 5000 Hotplate Stirrers



OHAUS Guardian 5000™ Hotplates Stirrers are designed for safety and simplicity in all research, academia and industrial applications. The design ensures proper mixing and temperature control of the top plate or your sample when using the optional temperature probe. Heating models include a Single Point Calibration feature for multiple setpoints. Select from five models with three plate sizes for your everyday heating and stirring applications.

- SafetyHeat™ System Protects the Lab
- Powerful, Consistent Stirring Performance
- Easy to Read LCD Display With Everything You Need to Know
- Designed for Durability and Reliability with the Exclusive SmartHousing™

# Guardian 5000 Hotplate Stirrers



Reliable Hotplate Stirrers with Exceptional Safety Features for Everyday Use

### Unique Features:

**SafetyHeat™ System Protects the Lab:** An industry-leading early detection system that uses two independent safety controls to continuously monitor the electronics and shut off heating before an overtemperature condition occurs.

**Powerful, Consistent Stirring Performance:** Precise stirring from 60 to 1600 rpm is made possible by the design of a powerful motor, strong magnet and software controlled ramp rate, ensuring secure magnetic coupling for viscous applications.

**Easy to Read LCD Display With Everything You Need to Know:** The bright LCD display includes large temperature and speed settings, intuitive icons and a prominent hot top indicator - all designed to quickly and easily monitor performance from across the lab.

**Designed for Durability and Reliability with the Exclusive SmartHousing™:** The SmartHousing™ is chemical resistant with an innovative, easy-to-clean design that channels spills away from internal components and the angled control panel.

### Other Features and Equipment:

Green indicator lights when unit is heating and stirring, probe in use icon, Single Point Calibration icon, probe connection, IP21 Ingress Protection, polycarbonate front panel, control knobs, On/Off switch for heater disconnect, built-in support rod holder, audible alarm.

### Compliance:

**Product Safety:** IEC/EN 61010-1; IEC/EN 61010-2-010; IEC/EN 61010-2-051

**Electromagnetic Compatibility:** IEC/EN 61326-1 Class A, Basic environments

**Compliance Marks:** CE; RCM; TÜV SÜD; WEEE

Model	e-G51ST07C	e-G51HP07C	e-G51HS07C	e-G51HS10C	e-G51HSRDM
Function	Stirring	Heating	Heating and Stirring		
Top Plate Size	17.8 x 17.8 cm		25.4 x 25.4 cm	13.5 cm diameter	
Speed Range	60 rpm to 1600 rpm	--	60 rpm to 1600 rpm		
Speed Stability	+/-2 %	--	+/-2 %		
Temperature Range	--	Ambient + 5 °C – 500 °C			Ambient + 5 °C – 380 °C
Temperature Stability*	--	+/-3 % Plate, below 100 °C +/-2 °C and +/-1 % Probe, below 100 °C +/-1 °C			
Temperature Calibration	--	3 Plate and 3 Probe			
Control	Digital				
Display	Backlit LCD for Speed	Backlit LCD for Temperature	Backlit LCD for Temperature and Speed		
Capacity	15 L			18 L	20 L
Top Plate Material	Ceramic			Aluminum	
Dimensions (H x L x W)	12.2 x 30.9 x 22.3 cm			12.2 x 41.5 x 28.6 cm	12.6 x 26.7 x 17.3 cm
Net Weight	2.6 kg			5.2 kg	2.6 kg
Power	120V, 1.0A, 50/60Hz 230V, 0.5A, 50/60Hz	120V, 10A, 50/60Hz 230V, 6.0A, 50/60Hz	120V, 11.2A, 50/60Hz 230V, 7A, 50/60Hz	120V, 8.3A, 50/60Hz 230V, 4.6A, 50/60Hz	
Power Consumption	108 W (120V) 104 W (230V)	1080 W (120V) 1242 W (230V)	1210 W (120V) 1449 W (230V)	896 W (120V) 952 W (230V)	
Working Environment	5 °C – 40 °C, 80 % RH, non-condensing				

\* Conditions permitting. Variations in temperature measurement process, vessel, ambient and sample will impact actual performance.

# Guardian 5000 Hotplate Stirrers Accessories

Item No.	Description	e-G51ST07C	e-G51HP07C	e-G51HS07C	e-G51HS10C	e-G51HSRDM
30500570	Base Plate, 135 mm					●
30500571	Handles for Base Plate					●
30500572	Sectional Block, 12 mm Vials					●
30500573	Sectional Block, 15 mm Vials					●
30500574	Sectional Block, 17 mm Vials					●
30500575	Sectional Block, 21 mm Vials					●
30500576	Sectional Block, 28 mm Vials					●
30500577	Sectional Block, 12 mm Test Tubes					●
30500578	Sectional Block, 16 mm Test Tubes					●
30500579	Sectional Block, 20 mm Test Tubes					●
30500580	Sectional Block, 25 mm Test Tubes					●
30500581	Uni Block, 12 mm Vials					●
30500582	Uni Block, 15 mm Vials					●
30500583	Uni Block, 17 mm Vials					●
30500584	Uni Block, 21 mm Vials					●
30500585	Uni Block, 28 mm Vials					●
30500586	Uni Block, 12 mm Test Tubes					●
30500587	Uni Block, 16 mm Test Tubes					●
30500588	Uni Block, 20 mm Test Tubes					●
30500589	Uni Block, 25 mm Test Tubes					●
30392233	Clamp, Specialty, Rod, CLS-RODS					●
30500590	Temperature Probe, 20 cm S/S		●	●	●	●
30500591	Temperature Probe, 20 cm PTFE		●	●	●	●
30500592	Temperature Probe, 25 cm S/S		●	●	●	●
30500593	Temperature Probe, 25 cm PTFE		●	●	●	●
30500594	In Use Cover Guardian, 17.8 cm x 17.8 cm	●	●	●		
30500595	In Use Cover Guardian, 25.4 cm x 25.4 cm				●	
30500596	In Use Cover Guardian, Round					●
30500597	Vessel Clamp	●	●	●	●	●
30500598	Stir Bar Retriever	●		●	●	●
30392314	Clamp, Specialty, Column, CLS-COLMNSS	●	●	●	●	●
30392315	Clamp, Specialty, Column, CLS-COLMNSM	●	●	●	●	●
30392316	Clamp, Specialty, Column, CLS-COLMNSL	●	●	●	●	●
30392317	Clamp, Specialty, Column, CLS-COLMNSX	●	●	●	●	●
30392318	Clamp, Specialty, Nester, CLS-NESTXS	●	●	●	●	●
30400145	Ultra Flex Support Kit	●	●	●	●	●
30400146	Support Rod And Clamp Kit	●	●	●	●	●
30400147	Spinbar, 2.5 cm PTFE	●		●	●	●
30400148	Spinbar, 3.8 cm PTFE	●		●	●	●
30400149	Spinbar, 7 cm PTFE	●		●	●	●
30400150	Spinbar, 10 cm with Pivot Ring PTFE	●		●	●	●

\* Conditions permitting. Variations in temperature measurement process, vessel, ambient and sample will impact actual performance.

## Guardian Series

### Frequently Asked Questions

#### What differentiates the Guardian 7000 Hotplate Stirrers?

**SmartLink:** provides long-range user detection for improving safety when using the heating function.

**SmartPresence:** detects when a user is nearby and safely turns off the heating function when no one is detected.

**SmartHeat:** allows users to control the maximum temperature, preventing overheating of sensitive samples.

**SafetyHeat:** our industry leading internal protection system assures safety in heating applications with dual-monitoring of system health.

**SmartRate:** allows users to safeguard sensitive applications with precise control of temperature and speed ramp rates.

**SmartHousing:** ensures that every Guardian hotplate stirrer is consistently safe to use at high temperature settings by remaining cool to the touch. The innovative design is easy to clean and channels spills away from the internal components, as well as being constructed from a chemical resistant material for long-term use in the lab.

#### How can the Guardian 7000 safeguard sensitive applications?

For precise sample control with the Guardian 7000, use the included temperature probe and enable SmartRate to select fast or slow temperature and speed ramp rates.

**SmartHeat** allows lab users to limit the maximum temperature of the hotplate stirrer preventing overheating of sensitive samples -- keeping the user and samples safe.

#### What are the benefits of using the Guardian Series Hotplate Stirrers with round top plates?

The Guardian round top models are ideal for biochemistry and chemistry labs that carry out complex heating and stirring applications and increase productivity by utilizing multiple positions to perform experiments in parallel. Round top models save valuable bench space and accept a wide range of aluminum block accessories that can accommodate standard vials and test tubes.



### What type of Guardian top plate material best suits the lab, ceramic or aluminum?

Ceramic and aluminum top plates are both suitable for lab use and each material has its benefits.

Ceramic top plates are chemical resistant and safer if working with corrosive chemicals that may splash onto the plate surface. They can withstand higher temperatures up to 500 °C and can be wiped clean.

The white surface of a ceramic top plate is preferable for quantitative chemical analysis or other work where clear visibility of the sample color is required.

The edges of a ceramic top plate may not be as hot as the center. This may not be suitable if uniform heating over the entire plate surface is needed for the application. Aluminum top plates offer more uniform temperature over the entire heating surface and will not crack or chip, and will withstand accidental handling.

To avoid thermal shock, glassware should be used on ceramic top plates and heating of metallic vessels should be avoided. Ceramic top plate units are also not suitable for sandbaths or any vessel that may reflect heat back onto the surface which may cause thermal shock.

### What types of applications are the Guardian 5000 Series Hotplate Stirrers designed for?

Guardian 5000 Series are designed for safety and simplicity in all academia, research, and industrial applications. The design ensures proper mixing and temperature control of the top plate or your sample when used with the optional temperature probe.

### Which features are built into the Guardian 5000 Series to make it safe for use in academic settings?

The Guardian 5000 Series are designed for durability, reliability, and safety with its exclusive **SmartHousing** and **SafetyHeat**.

**SmartHousing** remains cool to the touch at all temperature settings, is chemical resistant, and is an easy-to-clean design that channels away spills from internal components and the front panel.

**SafetyHeat** system protects the lab with an industry-leading early detection system that uses two independent safety controls to continuously monitor the electronics and shuts off heating before an overtemperature condition occurs.

# Guardian Series Comparison Chart

Features	Guardian 7000	Guardian 5000
SmartLink	X	-
SmartPresence	X	-
SmartHeat	X	-
SafetyHeat	X	X
SmartRate	X	-
SmartHousing	X	X
Hardened glass front panel	X	-
Polycarbonate front panel	-	X
Probe connection	X	X
Easy-to-clean ceramic/aluminum tops	X	X
Built-in support rod holder	X	X
USB port	X	-
Green indicator lights for heating/stirring	X	X
IP21 ingress protection	X	X
Control knobs	X	X
On/Off switch for heater disconnect	X	X
Probe in use icon	X	X
Audible alarm	X	X
Temperature calibration feature: 3 probe/3 plate	-	X
Temperature calibration feature: 5 probe/5 plate	X	-
Icons for SmartRate™, SmartHeat™, SmartPresence™, SmartLink™	X	-
LCD display	X	X
Timer	X	-

# Guardian Series Accessories\*



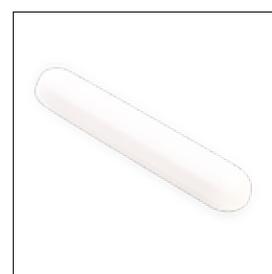
Vial and Test Tube Blocks



Base Plate and Handles



Temperature Probe



Spin Bars



Ultra Flex Support Kit



In Use Cover



Support Rod and Clamp Kit



Vessel Clamps

\*40 accessories available for Guardian Series

# Bead Mill Homogenizers





## Bead Mill Homogenizers

HT Lysing Homogenizer

## HT Lysing Homogenizer



The HT (High Throughput) Lysing Bead Mill Lab Homogenizer offers efficient solutions for all of your grinding, lysing, pulverizing, mixing and homogenizing sample preparation applications. High-throughput processing is ideal for multiple sample and tube configurations. Easy-to-load tray securely locks the microplate or tube in place. High speed linear motion processes samples quickly. Flexibility to use OHAUS sample tubes or any other brand.

- Flexibility to Handle Multiple Samples & Tube Configurations
- Take the Guesswork Out of Determining Optimum Speed/Time with 5 Pre-Set Programs
- Increased Efficiency With High-Throughput Sample Processing

## Bead Mill Tube for OHAUS Bead Mill Homogenizers

### Overview

OHAUS' convenient, ready-to-use Lysing Bead Tubes are a widely-used tool for sample homogenization. Each 2 ml self-standing tube contains pre-measured molecular biology grade grinding media\* to effectively disrupt samples using high throughput homogenizers (e.g., reciprocating OHAUS HT Lysing Homogenizer), popular oscillating homogenizers (e.g., Mini Lysing Homogenizer), and smaller reciprocal bead beaters.

Pre-treated grinding beads and balls are processed to remove potential contaminants, including nucleic acids, nucleases, and proteases, which could negatively impact downstream applications\*. Quality control testing is performed to ensure that the lysing bead tubes meet OHAUS' strict quality requirements.

### Bead Beating Tips

#### Lysis Buffers

Bead beating is often performed using lysis buffers (i.e., "wet grinding").

Buffer composition changes significantly depending on the application. The components of those buffers can dramatically impact bead beating effectiveness. Buffers used to isolate DNA and RNA will typically contain detergents which can cause excessive foaming during bead beating that may impair the motion (and grinding mechanism) of the grinding beads. Increasing homogenization time can be used to compensate for foaming and improve homogenization. Detergents can often be added after the processing.

Small molecule or protein extractions may require the use of organic solvents (e.g., methanol, acetonitrile). Use caution when handling organic solvents. It is best to use organic solvent mixtures containing small amounts of water when bead beating. Heat buildup from the collision of beads can pressurize the tubes, particularly when organic solvents are used without dilution.

Stainless steel grinding balls may oxidize when exposed to organic solvents (e.g., phenol), in which case a suitable alternative, such as 3 mm Zirconium beads in the Plant Lysing Bead Tubes, can be used.

#### If Making a Homogenization Buffer

- For **DNA** isolations, use of Tris-EDTA ("TE") is recommended to chelate magnesium ions, rendering DNases inactive.
- For **RNA** isolations, use of a reducing agent (e.g.,  $\beta$ -mercaptoethanol, dithiothreitol) and a chaotrope (e.g., guanidine hydrochloride, guanidine thiocyanate) is recommended to denature RNases present in the sample.
- For **Protein** isolations, use of protease inhibitors is recommended.

#### General Guidelines

Do not overfill Lysing Bead Tubes. Overfilling the tubes will impede homogenization by limiting the motion of the grinding media. Total volume of sample, grinding media, and buffer should never exceed 50% of tube volume.

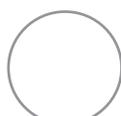
Homogenize in short bursts with pauses when homogenizing temperature-sensitive samples, such as proteins, to dissipate heat generated during grinding.

Do not use Lysing Bead Tubes for cryogenic grinding. Tubes will become brittle if dipped in liquid nitrogen.

\*Disclaimer: Not for clinical use. For research purposes only.



## Bacteria Lysing Bead Tubes



White

**Product Number: 30391402 (100 each)**

Contains: 100  $\mu\text{m}$  Zirconium Beads  
Button Setting #1: 5 min. @ 1500 rpm

**Protocol:**

1. Spin down 2 ml of sample or cultured bacteria.
2. Decant the supernatant and resuspend the pellet in 500  $\mu\text{l}$  of a suitable buffer.
3. Transfer the solution to a Bacteria Lysis Bead Tube.
4. Homogenize for 5 minutes at 1500 rpm (press preset button).
5. Centrifuge for 5 minutes at 12,000  $\times$  g.
6. Transfer the supernatant to a clean tube and store/process.

**May be used for:** bacteria/spores

**Helpful Hints:**

- Increase the homogenization time if obtaining low DNA concentrations from gram positive bacteria.
- Assays can be performed to assess optimal homogenization conditions.

## Yeast Lysing Bead Tubes

**Product Number: 30391404 (100 each)**

Contains: 400  $\mu\text{m}$  Zirconium Beads  
Button Setting #1: 5 min. @ 1500 rpm

**Protocol:**

1. Spin down 1 ml of sample or cultured yeast.
2. Decant supernatant and resuspend the pellet in 500  $\mu\text{l}$  of a suitable buffer.
3. Transfer the yeast solution to a Yeast Lysing Bead Tube.
4. Homogenize for 5 minutes at 1500 rpm (press preset button).
5. To remove debris, centrifuge for 5 minutes at 12,000  $\times$  g.
6. Transfer the supernatant to a clean tube for processing or storage.

**May be used for:** yeast, algae, spores

**Helpful Hints:**

- Longer processing times may be required to homogenize smaller yeasts (i.e. Pichia).
- Homogenization can be evaluated by comparing homogenized yeast to a non-homogenized sample under a microscope. Yeast cells that are cracked open will appear dark gray.



Yellow

## Fungi Lysing Bead Tubes (cells and mycelia)

**Product Number: 30391405 (100 each)**

Contains: 800  $\mu\text{m}$  Zirconium Beads  
Button Setting #1: 5 min. @ 1500 rpm

**Protocol:**

1. Cultured fungal cells, pseudomycelia, and small pellicle formations can be processed with Fungi Lysis Bead Tubes. Samples can be concentrated by centrifugation and resuspended in lysing buffer, or, if solid, added directly to Fungi Lysing Bead Tubes. Sample volume should be approximately 50  $\mu\text{l}$ . Add 500  $\mu\text{l}$  of a suitable buffer.
2. Homogenize for 5 minutes at 1500 rpm (press preset button).
3. To remove debris, centrifuge for 5 minutes at 12,000  $\times$  g.
4. Transfer the supernatant to a clean tube and process or store.



Blue

**May be used for:** fungal mycelium, cells, spores, eukaryotic algae

## Soft Sample Lysing Bead Tubes



Orange

**Product Number: 30391406 (100 each)**

Contains: 1.4 mm Zirconium Beads  
Button Setting#2: 2 min. @ 1500 rpm

**Protocol:**

1. For cultured cells or blood, centrifuge sample and decant supernatant. Resuspend the pellet in 500  $\mu\text{l}$  of a suitable buffer and transfer to a Lysing Bead Tube. For solid samples, place approximately 50 mg in a Lysing Bead Tube and 500  $\mu\text{l}$  of a suitable buffer. Homogenize for 2 minutes at 1500 rpm (press present button).
2. Remove debris by centrifuging for 5 minutes at 12,000  $\times$  g.
3. Transfer the supernatant to a clean tube for processing or storage.

**May be used for:** soft tissues (e.g., brain, adipose, liver, spleen); cultured cells and blood, as well as thin sections of fungal thallus and soft plant material

## Plant Lysing Bead Tubes



Green

**Product Number: 30391408 (100 each)**

Contains: 3.0 mm Zirconium Beads  
Button Setting #3: 3 min. @ 1300 rpm

**Protocol:**

1. Add 50 to 70 mg sample to a Lysing Bead Tube along with 500  $\mu$ l of a suitable buffer.
2. Start with a 2 minute homogenization step at 1500 rpm (press preset button). Check the sample for lysis. If the sample isn't fully homogenized, repeat the homogenization.
3. Pellet cellular debris by centrifuging for 5 minutes at 12,000  $\times$  g.
4. Transfer the supernatant to a clean tube for processing or storage.

**May be used for:** plant, stems, roots, and leaves

**Helpful Hints:**

- Plant sample mass should not exceed 70 mg.
- If using a CTAB buffer, increase the homogenization time, as foaming may impair movement of the beads.
- If plant stem does not fully homogenize, use the stainless-steel Animal Tissue Lysing Bead Tubes, with 600  $\mu$ l homogenization buffer.
- To homogenize plant pollen, use the Fungi Lysing Bead Tubes with 600  $\mu$ l homogenization buffer.
- Lysing Bead Tubes are not intended to homogenize seeds. Larger vials and grinding balls are better suited for this purpose.

## Animal Tissue Lysing Bead Tubes

**Product Number: 30391409 (100 each)**

Contains: 3 mm Stainless Steel Balls\*\*  
Button Setting #2: 3 min. @ 1300 rpm

**Protocol:**

1. Animal tissues can be extremely difficult to homogenize. Tissues high in collagen are very difficult. Hair is very difficult. For most tissues, place up to 50 mg sample in a Lysing Bead Tube. Add 500  $\mu$ l of a suitable buffer.
2. Homogenize for 2 minutes at 1500 rpm (press preset button). If the tissue isn't fully homogenized, repeat the homogenization step.
3. Remove insoluble debris by centrifuging for 5 minutes at 12,000  $\times$  g.
4. Transfer the supernatant to a clean tube for processing or storage.

**May be used for:** animal tissue, muscle, tumors, lungs, insects

**Helpful Hints:**

- Stainless Steel may oxidize when exposed to organic solvents in some buffers.
- Plant Lysing Bead Tubes may be substituted for Animal Tissue Lysing Bead Tubes, though slightly longer homogenization times may be necessary.



Red

## Environmental Lysing Bead Tubes

**Product Number: 30391410 (100 each)**

Contains: Mixture of 100  $\mu\text{m}$  / 800  $\mu\text{m}$  / 3.0 mm Zirconium Beads Button Setting #4: 4 min. @ 1500 rpm

**Protocol:**

1. Add approximately 50 mg sample and 500  $\mu\text{l}$  of a suitable buffer to the Lysing Bead Tube.
2. Homogenize for 4 minutes at 1500 rpm (press preset button).
3. Centrifuge for 6 minutes at 12,000  $\times$  g to pellet debris.
4. Transfer the supernatant to a clean tube and process or store.

**May be used for:** environmental samples, including feces, soil, sediments, biofilms

**Helpful Hints:**

- Environmental sample types (e.g., soil, sediment, biofilms) can vary widely. Sample volume needs to be adjusted based upon the target biomolecule's concentration in the sample. The protocol used in the subsequent extraction procedure will also significantly influence sample size.



Brown

## Lysing Bead Tube Sample Kit



**Product Number: 30391433 (14 each)**

**Contains:** Two (2) Bacteria Lysing Bead Tubes, two (2) Yeast Lysing Bead Tubes, two (2) Fungi Lysing Bead Tubes, two (2) Soft Sample Lysing Bead Tubes, two (2) Plant Lysing Bead Tubes, two (2) Animal Tissue Lysing Bead Tubes, and two (2) Environmental Lysing Bead Tubes

**Safety and Handling Instructions**

- Tubes should be stored tightly-capped in a cool, dry, well-ventilated area, protected from moisture and away from incompatible substances.
- Wash hands thoroughly after handling. Use with adequate ventilation and avoid ingestion and inhalation of tube contents.
- Do not leave tubes uncapped when not in use in order to avoid contamination.
- Do not submerge the tubes in liquid nitrogen.
- Please refer to your homogenizer manual and institution's safety guidelines/best practices to ensure that the tubes are safely loaded into the homogenizer.



A photograph of a laboratory with a red overlay. The background shows a lab bench with various glassware, including beakers and flasks, some held by metal stands. A person in a white lab coat is partially visible in the foreground. The red overlay is a solid rectangle on the right side of the image, containing white text.

# LabJaws Clamps & Supports

Lab-Lifts

## Lab-Lifts



LabJaws offers the largest selection of Lab-Frame Kits, Lab-Lifts, Rods and Support Stands in the industry to hold glassware safely. Whether you're looking for a standard lab-frame or a customizable set-up, we have options to fit any space or application. Select from 14 pre-configured lab-frame kits (connectors and feet included) to rods which can be purchased individually and combined with LabJaws accessories to build a customized frame.

- Choose from Stainless Steel and Aluminum Options to Best Suit Your Application
- Range of Pre-Configured Lab-Frame Kits and Customizable Rods for Your Lab Space
- Lab-Lifts Provide Exceptional Stability to Hold Items at Varying Heights

## Lab-Lifts

### OHAUS Aluminum Lab-Lifts

- Exceptional stability and durability
- Aluminum construction
- Three convenient sizes

Aluminum Lab-Lifts provide stable height adjustment for various items in the lab such as flasks, baths, and small equipment. Top and bottom decks are constructed of anodized aluminum. Internal supports and drive screws are constructed of stainless steel. Oversized sure-grip adjustment knobs provide smooth and accurate height adjustment. Lab-Lifts accept optional Support Rod Kit which mounts to the upper deck.

Deck Size	Min. to Max. Height	Max. Load*	Item Number
102 × 102 mm (4 × 4")	64 to 127 mm (2.5 to 5")	29.94 kg (66 lbs)	30400007
152 × 152 mm (6 × 6")	76 to 248 mm (3 to 9.75")	59.87 kg (132 lbs)	30400008
203 × 203 mm (8 × 8")	76 to 248 mm (3 to 9.75")	79.83 kg (176 lbs)	30400009
254 × 254 mm (10 × 10")	89 to 330 mm (3.5 to 13")	186 lbs (84.37 kg)	30400010

\*NOTE: Maximum load rating represents static weight only. Static weight is the amount a unit can hold, not lift.



#### OPTIONAL ACCESSORIES

### 17" Support Rod Kit

Ideal for creating an adjustable support stand for mounting various items such as thermometer clamps, temperature probes, flask and column clamps. This kit allows you to mount a 432 mm (17") threaded vertical support rod to the upper deck of a 6 × 6", 8 × 8", 10 × 10", 12 × 12" or 16 × 16" Lab-Lift by screwing the rod into the pre-drilled hole.

#### 17" Support Rod Kit includes:

- 1 - 432 mm (17") Stainless Steel Rod
- 1 - Jam Nut
- 1 - Flat Washer



Description	Rod Diameter	Item Number
17" Support Rod Kit	13 mm (0.51")	30400050

# Lab-Lifts

## OHAUS Heavy-Duty Lab-Lifts

- Stainless steel construction
- Seven convenient sizes to choose from
- Autoclavable and chemical resistant

These Heavy-Duty, Stainless Steel Lab-Lifts are ultra-stable lifting platforms with exceptional strength and durability. Constructed of stainless steel, Lab-Lifts are designed for use in extreme environments and high load applications. Equipped with oversized, sure-grip adjustment knobs that provide extra leverage for easy height adjustments. Durable construction allows lifts to be autoclaved or chemically cleaned. Ideal for use in fume hoods or bench tops and holds a variety of items such as glassware, hotplates, baths, and magnetic stirrers.

Deck Size	Min. to Max. Height	Max. Load*	Item Number
76 × 76 mm (3 × 3")	64 to 127 mm (2.5 to 5")	45.36 kg (100 lbs)	30400000
102 × 102 mm (4 × 4")	64 to 127 mm (2.5 to 5")	45.36 kg (100 lbs)	30400001
152 × 152 mm (6 × 6")	76 to 248 mm (3 to 9.75")	60.33 kg (133 lbs)	30400002
203 × 203 mm (8 × 8")	76 to 248 mm (3 to 9.75")	102.97 kg (227 lbs)	30400003
254 × 254 mm (10 × 10")	89 to 330 mm (3.5 to 13")	112.04 kg (247 lbs)	30400004
305 × 305 mm (12 × 12")	102 to 495 mm (4 to 19.5")	45.36 kg (100 lbs)	30400005
406 × 406 mm (16 × 16")	102 to 495 mm (4 to 19.5")	45.36 kg (100 lbs)	30400006

\*NOTE: Maximum load rating represents static weight only. Static weight is the amount a unit can hold, not lift.



OPTIONAL ACCESSORIES

**17" Support Rod Kit**

Ideal for creating an adjustable support stand for mounting various items such as thermometer clamps, temperature probes, flask and column clamps. This kit allows you to mount a 432 mm (17") threaded vertical support rod to the upper deck of a 6 × 6", 8 × 8", 10 × 10", 12 × 12" or 16 × 16" Lab-Lift by screwing the rod into the pre-drilled hole.

**17" Support Rod Kit includes:**

- 1 - 432 mm (17") Stainless Steel Rod
- 1 - Jam Nut
- 1 - Flat Washer



Description	Rod Diameter	Item Number
17" Support Rod Kit	13 mm (0.51")	30400050

**Ratchet Tool**

Designed to add extra leverage to your 12 × 12" or 16 × 16" Lab-Lift. This recommended Ratchet Tool easily attaches to the actuating rod to allow easy, accurate adjustments.



Description	Item Number
Ratchet Tool	30400049





## Water Analysis

Electrochemistry Selector Guide

Starter Bench Meters

Starter Portable Meters

Starter Pen Meters

Selection Guide

Sensors and solutions

# Electrochemistry Selector Guide

Electrochemistry Selector Guide

Model	Starter Series Bench Meters					Starter Series Portable Meters						Starter Series Pen Meters					
	Starter 5000	Starter 3100M	Starter 3100	Starter 3100C	Starter 2100	Starter 300	Starter 300C	Starter 300D	Starter 400	Starter 400M	Starter ST400D	pH meters	ORP meters	Conductivity meters	DO meters	Salinity meters	TDS meters
Measurement Range	-2.000 to 20.000 pH -30°C to 130°C	-2.00 to 20.00 pH 0.0 µS/cm to 199.9 mS/cm -5°C to 110°C	-2.00 to 16.00 pH -5°C to 110°C	0.0 µS/cm to 199.9 mS/cm 0°C to 100°C	-2.00 to 16.00 pH 0°C to 100°C	0.00 to 14.00 pH 0°C to 100°C	0.0 µS/cm to 199.9 mS/cm 0°C to 100°C	0.0 to 199.9% 200 to 400% 0°C to 50°C	-2.00~16.00 pH -1999~1999 mV -5°C~110°C	pH -2 to 16.00 pH ORP -1999 to 1999 mV Conductivity 0.0 µS/cm to 199.9 mS/cm TDS 0.1 mg/l to 199.9 g/l Salinity 0.0 to 99.9 psu Resistivity 0 to 20MΩ-cm Temperature -5°C to 110°C	0.0 to 200.0% 0°C to 50°C	0.00 to 14.00 pH*	-1000mV to 1000mV	0.0 to 199.9 µS/cm*	0.0 to 19.9 mg/L	0.0 to 80.0 ppt*	0 to 1000 mg/L*
Input	BNC	BNC Mini-Din	BNC	Mini-Din	BNC	BNC	Mini-Din	BNC	BNC	BNC	Mini-Din						
Automatic Temperature Compensation	●	●	●	●	●	●	●	●	●	●	●	●*	●*	●*	●*	●*	●*
Manual Temperature Compensation	●	●	●		●	●		●	●	●							
Battery Power						●	●	●	●	●	●	●	●	●	●	●	●
1 Point Calibration	●	●	●	●	●	●	●	●	●	●	●	●*	●*	●*	●*	●*	●*
2 Point Calibration	●	●	●		●	●		●	●	●	●	●*					
≥3 Point Calibration	●	●	●			●			●	●		●*					
Memory	●	●	●	●		●	●	●	●	●	●						
Backlit LCD	●	●	●	●					●	●	●						
LCD					●	●	●	●				●	●	●	●	●	●
Touchscreen	●																
Mechanical Keys		●	●	●	●	●	●	●	●	●		●	●	●	●	●	●
USB	●	●							●	●							
RS232	●	●	●	●													
USB Host	●											●					
GLP / Time / Date	●					●											
Multi Languages	●								●	●							
IP Protection	X-IP54					X-IP54	X-IP54	X-IP54	X-IP67	X-IP67	X-IP54	X-IP67	X-IP67	X-IP67	X-IP67	X-IP67	X-IP67
Stand-alone Electrode Holder	●	●	●	●													
Quick Reference Operation Guide	●	●	●	●	●												
In-Use Cover	●	●	●	●		●	●										
Hold Function				●	●	●	●	●	●	●	●	●*	●	●	●	●	●
Auto Shut Off									●	●		●	●	●	●	●	●

\* On specific models



## Starter 5000 pH Bench

- A 1000-item library allows for easy recall from data storage. Flexible pH analysis from 10 sensors for calibration storage, one self-defined and eight pre-defined buffer groups, three endpoint modes and GLP mode.
- A user-friendly bench meter with an innovative design, including an adjustable standalone electrode holder and large touch-screen, backlit LCD display.
- Featuring a USB port, IP54 housing and in-use-cover, this flexible and smooth-operating bench meter is built to last.



Model	Description
ST5000-B	ST5000 meter, stand alone electrode holder, ST5000 in-use-cover, 4G USB-driver
ST5000-F	ST5000-B, ST350 pH/ATC with glass body, pH buffer powder sachet

Starter 5000 & Starter 3100M pH Bench

## Starter 3100M pH & Conductivity Bench



- Combining all of the features from the benchtop pH and conductivity meter into one multi-meter, makes testing pH, ORP, conductivity, salinity, TDS, resistivity, temperature a seamless process.
- A user-friendly bench meter with an innovative design, including an adjustable standalone electrode holder and large backlit LCD display.
- A 99-item memory for pH and/or conductivity measurements makes for efficient data documentation. RS232 interface allows for connection to external devices such as a printer or computer for data storage or transfer.

Model	Description
ST3100M-B	ST3100M bench meter, stand-alone electrode holder, in-use-cover
ST3100M-F	ST3100M-B content; ST310 pH/ATC with epoxy body, refillable, STCON3 Plastic Conductivity probe, pH powder sachet set, 1413 uS/cm and 12.88 mS/cm solution (20ml bottle)
ST3100M-N	ST3100M-B content; ST230 combination pH electrode with rugged bulb, STTEMP30 Stainless steel ATC probe, STCON3 Plastic Conductivity probe, pH powder sachet set, 1413 uS/cm and 12.88 mS/cm solution (20ml bottle)

## Starter 3100 pH Bench



- Auto buffer recognition with three different buffer groups makes it easy to avoid errors during the calibration process.
- A user-friendly bench meter with an innovative design, including an adjustable standalone electrode holder and large backlit LCD display.
- A 99-item memory for pH and/or conductivity measurements makes for efficient data documentation. RS232 interface allows for connection to external devices such as a printer or computer for data storage or transfer.

Model	Description
ST3100-B	ST3100 meter (with standalone electrode holder, in-use-cover)
ST3100-F	ST3100-B with ST310 3-in-1 plastic refillable pH electrode, pH buffer powder sachet



## Starter 2100 pH Bench

- With an attached quick guide, five clearly marked keys and user-friendly software, the bench meter can be operated with minimal training.
- The built-in electrode holder provides straightforward and convenient all-in-one operation, while the large LCD display screen clearly displays results.
- Accurate results are ensured by key features like auto buffer recognition, electrode condition indicator, automatic temperature compensation and reference input.



Model	Description
ST2100-B	ST2100 meter with built-in electrode arm
ST2100-E	ST2100-B with ST210 2-in-1 plastic refillable pH electrode and pH buffer powder sachet
ST2100-F	ST2100-B with ST210 2-in-1 plastic refillable pH electrode STTEMP30 temperature electrode, and pH buffer powder sachet



## Starter 3100C Conductivity Bench

- Four-pole linear electrode with temperature sensor safeguards the unit from polarization and pollution effects to ensure accurate readings.
- A user-friendly bench meter with an innovative design, including an adjustable standalone electrode holder and large backlit LCD display.
- 99-item memory for conductivity measurements makes for efficient data documentation. RS232 interface allows for connection to external devices such as a printer or computer for data storage/transfer.



Model	Description
ST3100C-B	ST3100C meter (with standalone electrode holder, and 2 small bottles of standard conductivity solution- 1413 $\mu\text{S}/\text{cm}$ and 12.88 $\text{ms}/\text{cm}$ , in-use-cover)
ST3100C-F	ST3100C-B meter with STCON3 4-pole Conductivity Electrode (70 $\mu\text{S}/\text{cm}$ -200 $\text{ms}/\text{cm}$ )

## Bench Meter Specifications

Model	ST5000	ST3100M	ST3100	ST2100	ST3100C
Measurement Range	-2.000...20.000 pH -2000.00...+2000.00 mV -30°C...130 °C	-2.00...20.00 pH -2000...+2000mV 0.0 $\mu\text{S}/\text{cm}$ ...199.9 $\text{mS}/\text{cm}$ 0.1 $\text{mg}/\text{l}$ ...199.9 $\text{g}/\text{l}$ (TDS) 0...20 $\text{M}\Omega\text{-cm}$ (Resistivity) 0-100 psu -5°C...110 °C	-2.00...16.00 pH -1999...1999 mV -5°C...110 °C	0.00...14.00 pH -1999...1999 mV 0°C...100 °C	0.0 $\mu\text{S}/\text{cm}$ ...199.9 $\text{mS}/\text{cm}$ 0.1 $\text{mg}/\text{l}$ ...199.9 $\text{g}/\text{l}$ (TDS) 0.00 ... 19.99 psu (Salinity) 0 °C...100 °C
Resolution	0.1/0.01/0.001pH 1/0.1/0.01mV 0.1 °C	0.01 pH 1mV 0.01 $\mu\text{S}/\text{cm}$ Auto range 0.01 $\text{mg}/\text{L}$ Auto range 0.01 $\Omega\text{-cm}$ Auto range 0.01 psu 0.1 °C	0.01 pH 1 mV 0.1 °C	0.01 pH 1 mV 0.1 °C	Automatic range 0.1 °C
Error Limits	$\pm 0.002$ pH $\pm 1$ mV $\pm 0.1$ °C	$\pm 0.01$ pH $\pm 1$ mV $\pm 0.5$ %F.S. $\pm 0.3$ °C	$\pm 0.01$ pH $\pm 1$ mV $\pm 0.5$ °C	$\pm 0.01$ pH $\pm 1$ mV $\pm 0.5$ °C	$\pm 0.5$ % of the measured value $\pm 0.3$ °C
Calibration	1-9 points	3 point, 6 buffer groups for pH 5 predefined conductivity standard points	3 points 3 predefined buffer group	1 or 2 Points 1 Predefined Buffer Group (4.01, 7.00, 10.01)	1 point 3 predefined standards
Memory	1000 sets, with 10*10 calibration data, 8 predefined buffer groups and 1 self-define buffer group	99 sets pH and 99 sets conductivity data, last calibration data	99 measurements Last calibration data	Last Calibration Data	99 measurements The last calibration data
Power Supply	110-240V/50 Hz, DC 9V	110-240V/50Hz, 12 V DC	110-240V/50Hz, DC 12V	110-240V/50Hz, DC 12V	
Size/Weight	220 W x 175 D x 78 H mm / 0.55 kg	Approximately 220 W x 175 D x 78 H mm / 0.95 kg	Approximately 220 W x 175 D x 78 H mm / 0.75 kg	Approximately 220 W x 175 D x 78 H mm / 0.75 kg	Approximately 220 W x 175 D x 78 H mm / 0.75 kg
Display	Color Touch-Screen LCD	LCD with backlight	Liquid crystal with backlight	Liquid crystal	White backlight Liquid crystal
Input	BNC, impedance $>3*10e+12$ $\Omega$ Cinch, NTC 30 k $\Omega$	BNC, impedance $>10e+12$ $\Omega$ Mini-Din Cinch, NTC 30 k $\Omega$	BNC, impedance $>10e+12$ $\Omega$ Cinch, NTC 30 k $\Omega$	BNC, impedance $>10e+12$ $\Omega$ Cinch, NTC 30 k $\Omega$	Mini-Din
Temperature Compensation	ATC and MTC	0 °C...100 °C for pH Temperature Coefficient range: 0.00 %/°C...10.00 %/°C Ref T: 20 or 25 °C	ATC & MTC	ATC & MTC	Linear: 0.00 %/°C...10.00 %/°C Reference temperature: 20 & 25 °C
Housing	ABS	ABS	ABS	ABS	ABS

## Starter 400M



- Built with IP67 waterproof housing as well as a rubber cover and IP67 probes, the ST400 is ideal for prolonged use in any field environment.
- Rechargeable lithium battery provides 40 hours of uninterrupted use and more than 300 charge cycles - eliminating the need to change out batteries often.
- The ST400M features intuitive software which guides the user through operation. All necessary information to run tests successfully such as electrode condition is displayed clearly on the large LCD.

Model	Description
ST400M-B	ST400M Meter with IP67 Rubber Housing, Electrode Clip, Wrist Strap and 4 AAA Batteries (Probes Not Included)
ST400M-F	ST400M-B with ST320 IP67 3m and STCON3 IP67 3m probes
ST400M-G	ST400M-F with Portable Bag



## Starter 400

- Built with IP67 waterproof housing as well as a rubber cover and IP67 probes, the ST400 is ideal for prolonged use in any field environment.
- Rechargeable lithium battery provides 40 hours of uninterrupted use and more than 300 charge cycles - eliminating the need to change out batteries often.
- The ST400 features intuitive software which guides the user through operation. All necessary information to run tests successfully such as electrode condition is displayed clearly on the large LCD.



Model	Description
ST400-B	ST400 Meter with IP67 Rubber Housing, Electrode Clip, Wrist Strap and 4 AAA Batteries (Probes Not Included)
ST400-F	ST400-B with ST320 IP67 3m Probe
ST400-G	ST400-F with Portable Bag

## Starter 400D



- Frequent membrane replacement not needed. Also, warm up and stirring of samples when taking measurements is not required.
- The automatic/manual endpoints enable easy recall of last calibration data and stored information with one touch.
- Simple calibration process offers quick delivery of measurements, and automatic temperature and barometric pressure compensation ensure accurate results.

Model	Description
ST400D-B	ST400D Meter with IP54 Sets, Electrode Clip, Wrist Strap and 4 AAA Batteries (Electrode not included)
ST400D	ST400D-B with STDO21 Probe
ST400D-G	ST400D-B with STDO21 Optical DO Probe, Portable Bag



## Starter 300



- Each time the meter is calibrated, icons appear on the display to confirm the accuracy of the calibration process so you can ensure accurate measurement
- Auto buffer recognition stores calibration data and helps to avoid errors during the calibration process.
- Automatic and manual temperature compensation helps ensure accurate readings.

Model	Description
ST300-B	ST300 Meter (with IP54 Sets, Electrode Clip, Wrist Strap and 4 AAA Batteries)
ST300	ST300-B, ST320 3-in-1 Plastic Gel pH Electrode, and pH Buffer Powder Sachet
ST300D-G	ST300D-B with STDO11 Galvanic DO Probe, STTEMP30 Temperature Probe, Portable Bag

Starter 300 & Starter 300C & Starter 300D

## Starter 300C



- The 4-pole linear electrode offers a large conductivity range that safeguards itself from polarization and pollution effects.
- Automatic temperature compensation with an adjustable temperature coefficient.

Model	Description
ST300C-B	ST300C Meter ( with 2 Small Bottles of Standard Conductivity Solution - 1413 $\mu\text{S}/\text{cm}$ and 12.88ms/cm, IP54 Sets, Electrode Clip, Wrist Strap, 4 AAA Batteries)
ST300C	ST300C-B, with STCON3 4-Ring Conductivity Electrode (70 $\mu\text{S}/\text{cm}$ -200ms/cm)
ST300C-G	ST300C-B, STCON3 4-Pole Conductivity Probe (70 $\mu\text{S}/\text{cm}$ - 200 mS/cm), Portable Bag



## Starter 300D



- Each time the meter is calibrated, icons appear on the display to confirm the accuracy of the calibration process so you can ensure accurate measurement
- Push-button toggling between ppm, mg/L and percentage
- The galvanic electrode can be used immediately after being powered on without the wait time typically associated with dissolved oxygen meters

Model	Description
ST300D-B	ST300D Meter (with IP54 Sets, Electrode Clip, Wrist Strap and 4 AAA Batteries)
ST300D	ST300D-B with STDO11 Galvanic DO Electrode, and STTEMP30 Temperature Electrode
ST300D-G	ST300D-B with STDO11 Galvanic DO Probe, STTEMP30 Temperature Probe, Portable Bag

## Portable Meter Specifications

Model	ST400M	ST400	ST400D	ST300	ST300C	ST300D
Measurement Range	-2 ... 16.00 pH -1999 ... 1999 mV 0.1 mg/l ... 199.9 g/l -5 °C to 110 °C	-2 ... 16.00 pH -1999 ... 1999 mV -5 °C ... 110 °C	0.0 to 200.0% 0.00 to 20.0mg/L(ppm) 0 to 50 °C	0.00...14.00 pH -1999...1999 mV 0 °C to 100 °C	0.0 µS/cm...199.9 mS/cm 0.1 mg/l/...199.9 g/l (TDS) 0 °C to 100 °C	0.0 to 199.9%; 200 to 400% 0.00 to 19.99; 20.0 to 45.0 mg/L 0.00 to 19.99; 20.0 to 45.0 ppm 0 to 50 °C
Measurement Resolution	0.01 pH 1 mV 0.1 µS/cm, Auto-range 0.01 mg/l, Auto-range 0.01 psu, Auto-range 0.1 °C	0.01 pH 1 mV 0.1 °C	0.1% 0.01 mg/L(ppm) 0.1 °C	0.01 pH 1 mV 0.1°C	Automatic Range 0.1°C	0.1%; 1% 0.1 mg/L; 1mg/L 0.01 ppm; 0.1 ppm 0.1 °C
Barometric Range	NA	NA	50.0 to 115.0 kPa	NA	NA	375 to 825 mmHg 500 to 1100 mbar 500 to 1100 hPa
Barometric Resolution	NA	NA	0.1Kpa	NA	NA	1 mmHg 1 mbar 1 hPa
Error Limits	NA	NA	± 0.2 mg/L (<8 mg/L), ± 0.3 mg/L (8 to 20 mg/L); ± 0.3 °C ± 1.5 Kpa	± 0.01 pH ± 1 mV ± 0.5 °C	± 0.5 % of the Measured Value ± 0.3°C	± 1%; ± 0.3 °C
Calibration	pH: 1-5 points, 6 predefined buffer groups Conductivity: 1 point, 5 predefined standards	1-5 points, 6 predefined buffer groups	1 point or 2 points	1-3 Points 4 Predefined Buffer Groups	1 Point 4 Predefined Standards	1 or 2 Points 100% and 0%
Memory	1000 measurements (pH + conductivity) 5 calibration data for each sensor ID	1000 measurements 5 calibration data for each sensor ID	99 sets, Last Calibration Data	30 Measurements Last Calibration Data	30 Measurements Last Calibration Data	30 Measurements Last Calibration Data
Power Supply	Rechargeable Li-battery, 2600mAh; > 300 charge and discharge times	Rechargeable Li-battery, 2600mAh; > 300 charge and discharge times	4 x AAA(LR03) Batteries, 12 hrs	4 AAA > 500 Operating Hours	4 AAA > 250 Operating Hours	4 AAA > 250 Operating Hours
Size/Weight	Approximately 100W × 230 L × 40 H mm / 0.35 kg	Approximately 100W × 230 L × 40 H mm / 0.35 kg	Approximately 90 W × 150 D × 35 H mm / 0.16 kg (Without Batteries)	Approximately 90 W × 150 D × 35 H mm / 0.18 kg (Without Batteries)	Approximately 90 W × 150 D × 35 H mm / 0.16 kg (Without Batteries)	Approximately 90 W × 150 D × 35 H mm / 0.18 kg (Without Batteries)
Display	LCD with Backlight	LCD with Backlight	Liquid Crystal	Liquid Crystal	Liquid Crystal	Liquid Crystal
Input	pH:IP67 BNC, impedance > 10e+12 Ω Temperature:IP67 Cinch, NTC 30 k Conductivity:IP67 LTW	pH: IP67 BNC, impedance > 10e+12 Ω Temperature: IP67 Cinch, NTC 30 k	4-pin screw	BNC, Impedance > 10e+12 Ω Cinch, NTC 30 kΩ	Mini-Din	BNC, Cinch, NTC 30 kΩ
Temperature Compensation	pH:ATC & MTC Conductivity:ATC, Linear: 0.00 / °C to 10.00%/ °C Reference Temperature: 20 or 25 °C	ATC & MTC	ATC	ATC & MTC	ATC,Linear: 0.00 %/°C...10.00 %/°C Reference Temperature: 20 & 25 °C	ATC & MTC
Salinity Compensation	NA	NA	0.0 to 40.0 ppt	NA	NA	0.0 to 50.0 ppt
IP Protection	IP67	IP67	IP54	IP54	IP54	IP54
Housing	ABS / PC	ABS / PC	ABS	ABS	ABS	ABS

## Starter Pen Meters

- Small, economical pen meters offer simple, fast, and straightforward operation.
- With durable IP67 waterproof ABS housing, protective sensor cap, and an automatic shutdown feature that preserves battery life, OHAUS pen meters can endure consistent use in rough, wet environments.
- Equipped with a wrist strap to prevent accidental drop and damage.



All the pen meters pre-installed 4 AG13 1.5V micro alkaline batteries which are easily to be replaced.



## ST 20M

The OHAUS ST20M is a multi parameter pen meter that directly measures pH, conductivity and temperature, as well as provides conversion measurements for TDS and Salinity. These fully waterproof pen meters combine measurement capabilities of two testers in one convenient pocket-sized unit.

Great for water, laboratory or plant use, the ST20M features a single-junction pH electrode and a pin-style conductivity probe for longer usage and durability. The replaceable electrode module saves you money by reusing the meter body. Advanced features include auto-shutoff, low-battery indicator, and simple and easy calibration.

- Measures 5 parameters including pH, Conductivity, TDS, Salinity, and Temperature
- Waterproof rated to IP67
- Automatic Temperature Compensation
- Auto shutoff with low battery indicator
- ST20M meter includes electrode, protective sensor cap, four AG13 1.5V batteries, and wrist strap.

Model		ST20M-B	ST20M-C
Measurement Range	pH	0 - 14	
	Conductivity	0 ... 1999 $\mu\text{S}/\text{cm}$	0 ... 19.99 $\text{mS}/\text{cm}$
	TDS	0 ... 1000 $\text{mg}/\text{L}$	N/A
	Salinity	N/A	0.0–10.0 ppt
	Temperature	0 - 99.0 $^{\circ}\text{C}$	
Resolution	pH	0.01 pH	
	Conductivity	1 $\mu\text{S}/\text{cm}$	0.01 $\text{mS}/\text{cm}$
	TDS	1 $\text{mg}/\text{L}$	NA
	Salinity	N/A	0.1 ppt
	Temperature	0.1 $^{\circ}\text{C}$	
Accuracy	pH	$\pm 0.05$ pH	
	Conductivity	$\pm 2\%$ Full Scale	
	TDS	$\pm 2\%$ Full Scale	N/A
	Salinity	N/A	$\pm 2\%$ Full Scale
	Temperature	$\pm 0.5$ $^{\circ}\text{C}$	
ATC		Yes, with temperature display	
ATC Range		0 - 45 $^{\circ}\text{C}$	
Calibration	pH	3 point	
	Conductivity	1 point	
	TDS	N/A	
	Salinity	N/A	
IP Grade		IP67	
Dimensions		185 × 45 × 38 mm	
Weight		110 g	
Batteries		4 × 1.5V	
Battery Life		100 hours	
Warranty		1 year	



## pH Pen



Two models with varying resolution and accuracy, ST10 and ST20 offer a convenient way to measure pH, or the relative acidity or alkalinity of a sample at a given temperature. The pH pen meters can be completely operated with just one hand, freeing up your other hand to handle samples.

Model	ST20	ST10
Range	0.00-14.00	0.0-14.0
Resolution	0.01pH	0.1pH
Accuracy	0.05pH	0.1pH
Temperature Range	0.0-99.0 °C	NA
Temperature Compensation	Yes	NA
Display	Dual	Single
Calibration	3 Point	NA
Buffer Group	4.01, 7.00, 10.01	NA



## ORP Pen

ST10R and ST20R can bring measurement of ORP to virtually anywhere your need for the measurement of the availability of electrons in a liquid lies. Both models provide almost instantaneous results and the ST20R offers the ability to freeze the reading right on the display to provide additional time for data logging.



Model	ST20R	ST10R
Range	-1000mV-1000mV	-1000mV-1000mV
Resolution	1mV	1mV
Accuracy	2mV	2mV
Temperature Range	0.0-99.0 °C	NA
Temperature Compensation	Yes	NA
Display	Dual	Single
Calibration	NA	NA

## DO Pen



The perfect DO Meter for every application that requires portable operation and quick results. With IP67 waterproof design and automatic shutdown feature that preserves battery life, the Starter DO Meters can endure consistent use in rugged environments.

Model	ST20D
Measurement Range	0.0 – 19.9 mg/L
Resolution	0.1 mg/L
Accuracy	± 0.5 mg/L
Battery	4 AG13 1.5V Micro Alkaline Batteries
Dimension (mm)	185 × 42 × 37
Weight (g)	90
Auto-off	After 15 Minutes of Inactivity
Auto Temperature Compensation Range	5 to 45 °C (41 to 113 °F)
Materials	ABS



## Conductivity Pen

Starter pen meters are the choice for basic testing needs of the total ionic concentration within a solution. With six models that can measure within three different conductivity ranges, there is a Starter conductivity meter for every application that requires portable operation and quick results.



Conductivity Pen & Salinity Pen & TDS Pen

Model	ST20C-C	ST20C-B	ST20C-A	ST10C-C	ST10C-B	ST10C-A
Range	0.00-19.99 ms/cm	0-1999 us/cm	0.0-199.9 us/cm	0.00-19.99 ms/cm	0-1999 us/cm	0.0-199.9 us/cm
Resolution	10 us/cm	1 us/cm	0.1 us/cm	10 us/cm	1 us/cm	0.1 us/cm
Accuracy	±1.5% FS	±1.5% FS	±1.5% FS	±2.5% FS	±2.5% FS	±2.5% FS
ATC	With Temperature Display			Without Temperature Display		
Display	Dual	Dual	Dual	Single	Single	Single

## Salinity Pen



Starter pen meters combine all of the most useful features for measuring salinity, or the dissolved salt content in a liquid medium. With the combination of quality construction and sturdy design, Starter pen meters will provide durable operation in even tougher environments.

Model	ST20S	ST10S
Range	0.0-80.0 ppt	0.0-10.0 ppt
Resolution	0.0-50.0 ppt	0.1 ppt
Accuracy	±1.5% FS	±2.5% FS
ATC	With Temperature Display	Without Temperature Display
Display	Dual	Single



## TDS Pen

When you need reliable and accurate measurement of TDS, the Starter pen meters offer a great value in a portable and compact design. Bring the Starter TDS meter wherever your need to measure the combined content of all organic and inorganic substances in a liquid takes you.

Model	ST20T-B	ST20T-A	ST10T-B	ST10T-A
Range	0-1000 mg/L	0.0-100.0 mg/L	0-1000 mg/L	0.0-100.0 mg/L
Resolution	1 mg/L	0.1 mg/L	1 mg/L	0.1 mg/L
Accuracy	±1.5% FS	±1.5% FS	±2.5% FS	±2.5% FS
ATC	With Temperature Display	With Temperature Display	Without Temperature Display	Without Temperature Display
Display	Dual	Dual	Single	Single



## pH Electrode Selection Guide

Industry	Sample Type	Double Junction	Standard	Economy/Basic	Micro
Education	Student Use	ST260	/	ST310/ST210	/
General Purpose	Most sample types	ST260	ST350	ST310	/
Emulsions	Foods, cosmetics, oils	/	ST350	ST230	/
Emulsions	Petroleum products, paint	/	/	/	/
Flat Surfaces	Paper, Cheese, meat, agar	/	STSURF	/	/
Biological/Pharmaceutical	TRIS buffer, proteins, enzymes	ST260	/	/	/
Low Ionic Strength	Treated effluent, deionized water, distilled water	/	STPURE	/	/
Small Sample Size	Microtiter plates, Test tubes, small flasks and beakers as small as 0.2 mL	/	/	/	STMICRO8
Small Sample Size	TRIS buffer, proteins, sulfides, Fits 96 Microwell Plates	/	/	/	STMICRO5
Viscous Liquids	Slurries, suspended solids sludges	/	ST350	ST230	/
Waters	Acid rain, boiler feed water, distilled water, rain water,	ST260	/	/	/
Waters	Drinking water, tap water	/	ST350	ST310	/
Waters	Wastewater, seawater	/	ST270	ST230	/
Harsh Environments	Field or plant use, rugged use	/	/	ST320	/
High Ionic Strength	Acids, bases, brines, pH > 12 or pH < 2	/	/	ST230	/
Soft samples	Piercing Fruits, Cheese and Meats	/	ST270	/	/

## Sensor specifications

Sensor Type	Picture	Model	Description	Shaft Material Refillable	Shaft dimension Cable length	Measurement range and accuracy	Temp. Range	Application Area/Features	Connector
pH		ST350	pH/ATC with glass body	Glass Body	120 × 12mm 1m	0--14pH	0-60°C	Top performance for QC and research Chemical resistant glass body	BNC +Cinch
		ST320	pH/ATC with epoxy body, Low maintenance	Epoxy Body	120 × 12mm 1m	0--14pH	0-60°C	General purpose, high performance Epoxy body for ruggedness	BNC +Cinch
		ST320ip67	pH/ATC with epoxy body, low maintenance gel	Glass Body	120 × 12mm 1m	0--14pH	0-60°C	high performance pH analysis in the field Epoxy body and built-in ATC	BNC +Cinch
		ST310	pH/ATC with epoxy body, refillable	Epoxy Body	120 × 12mm 1m	0--14pH	0-60°C	General purpose for everyday use Long-lasting	BNC +Cinch
		ST272	Combination pH electrode with stainless steel cutting blade	Epoxy Body	120 × 12mm 1m	2--12pH	0-50°C	For meat, cheese and sludge where glass alone may break	BNC
		ST270	Combination pH electrode, glass body, spear tip	Glass Body	120 × 12mm 1m	0--14pH	0-100°C	For meat, cheese and fruit samples	BNC
		ST260	Double Junction refillable combination pH electrode	Glass Body	120 × 12mm 1m	0--14pH	0-60°C	Use in dirty water or TRIS, sulfide and protein samples	BNC
		ST230	Combination pH electrode with rugged bulb	Glass Body	110 × 12mm 1m	0--14pH	0-60°C	For soil, sludge, colloids, viscous material Toughened bulb for rugged lab use	BNC
		ST210	Combination pH electrode with epoxy body	Epoxy Body	120 × 12mm 1m	0--14pH	0-80°C	For routine or research applications	BNC
		STPURE	Combination pH electrode	Glass Body	120 × 12mm 1m	2--12pH	0-80°C	For sample Low Ionic Strength Toughened bulb for rugged lab use	BNC
		STSURF	combination pH electrode with epoxy body, flat surface	Epoxy Body	120 × 12mm 1m	0--14pH	0-60°C	Measure Moist Surfaces Such As Agar Gel plates, Meats and Cheese A flat pH bulb and refillable designs	BNC
		STMICRO5	combination pH electrode with glass body, semi-micro tip	Glass Body	80 × 5mm 1m	0--14pH	0-60°C	For samples with size constraints For samples with size limitations Measure samples as small as 0.2 mL in 96 well plates	BNC
		STMICRO8	Combination pH electrode with glass body, long length	Glass Body	150 × 8mm 1m	0--14pH	0-60°C	For routine or research applications Annular junction prevents clogging	BNC

## Sensor specifications

Sensor Type	Picture	Model	Description	Shaft Material Refillable	Shaft dimension Cable length	Measurement range and accuracy	Temp. Range	Application Area/Features	Connector
Reference		STREF1	Ag AgCl	Glass Body	110 × 12mm 1m	NA	0-100°C	E Vs SHE is 0.198V	2mm banana
ORP		STORP1	Pt disk	plastic non-refillable	120 × 12mm 1m	-1000mV--1000mV 1mV	0-80°C	Normal samples	BNC
		STORP2	Pt band	glass refillable	120 × 12mm 1m	-1000mV--1000mV 1mV	0-100°C	Can endure high temperature and organic solvents	BNC
Conductivity		STCON3	4-pole sensor with temp sensor	Plastic	130 × 14mm 1m	70µS/cm-200mS/cm 0.5%	0-50°C	Normal samples	Mini-Din
		STCON7	2-pole sensor with temp sensor	Plastic	95 × 12mm 1m	0.02µS/cm-200µS/cm 0.5%	0-50°C	Pure water, not fit for ultra-pure water	Mini-Din
Dissolved Oxygen		STDO11	Galvanic	Plastic	120 × 12mm 1m	0-45mg/L	0-50°C	Normal samples, no warm up needed, no maintenance	BNC
		STDO21	Optical	Plastic	1m or 5m	0-20mg/L	0-60°C	low maintenance, no need stirring samples	4-pin screw
Temperature		STTEMP30	NTC 30KΩ	Steel	120 × 3mm 1m	0-100°C 0.5°C	0-100°C	Can work with ST300, ST300D, ST2100 and ST3100	Cinch

## Solution and Buffers

OHAUS #	Description
30100424	pH1.68, 250ml per bottle
30100425	pH4.01, 250ml per bottle
30100426	pH6.86, 250ml per bottle
30100427	pH7.00, 250ml per bottle
30100428	pH9.18, 250ml per bottle
30100429	pH10.01, 250ml per bottle
30100440	pH12.45, 250ml per bottle
30100441	Cond 10 µS/cm, 250ml per bottle
30100442	Cond 84 µS/cm, 250ml per bottle
30100443	Cond 1413 µS/cm, 250ml per bottle
30100444	Cond 12.88 µS/cm, 250ml per bottle
30393269	Cond standard 500µS/cm, 250ml
83033971	pH buffer powder Sachet(4.01;7.00;10.01)
30059255	pH electrode reference electrolyte
30059256	pH electrode protection solution
30282603	Cable, 4m, BNC, Starter electrodes
30031635	Portable Bag for STARTER
30058732	Holder, attached, electrode
30058733	Holder, standalone, electrode
30058734	In-Use-Cover, STARTER







## Centrifuge

FC5306 Mini Centrifuge

FC5513 High-Speed Microliter Centrifuges

FC5515/FC5515R High-Speed Microliter Centrifuges

FC5706 Multi Centrifuge

FC5707 Multi Centrifuge

FC5714 High-Speed Multi-Pro Centrifuges

FC5718/FC5718R High-Speed Multi-Pro Centrifuges

FC5816/FC5816R High-Speed Multi-Pro Centrifuges

FC5916/FC5916R High-Speed Multi-Pro Centrifuges

## FC5306 Mini Centrifuge



### Powerful and Convenient Mini Centrifuge for Simple and Rapid Life Science Separation Applications!

The OHAUS Frontier 5306 is a powerful mini centrifuge for simple and rapid liquid separation. The FC 5306 includes an 8-position 1.5/2 ml tube rotor as well as a 4-position 8-strip PCR tube rotor that can accommodate 32 individual PCR tubes or 0.2 ml strip tubes. With the included adapters, 0.2 ml and 0.5 ml strip tubes can also be accommodated in the 8 position tube rotor, further increasing its versatility. Frontier 5306 also has a quick release design in which the rotors can be removed and installed without the use of any tool. This centrifuge provides quiet, safe, and easy operation for your daily quick spin-down applications.

#### A Quiet Motor and Rubber Base Assure Quiet Operation

With a low voltage power input, quiet motor, and rubber base that absorbs vibrations, Frontier 5306 keeps operational noise to a minimum and reduces disruptions in the laboratory.

#### Multiple Protective Features Ensure the Safety of Centrifuge Operator

Frontier 5306 has many safety attributes, including a low voltage power input, sturdy lid, and two safety switches which immediately stop the rotors should the lid open while in rotation. An imbalance sensor also stops the centrifuge if the rotors become imbalanced or sudden shock occurs, protecting the operator from being injured by the high-speed spinning rotors.

#### Simple One-Step Operation

Frontier 5306 takes simple operation to a new level. Once the device is powered on, simply place your sample in the centrifuge, close the lid, and it will begin to rotate. Not even one button press is needed in order to separate your sample.



Dual safety switches

# FC5306 Mini Centrifuge

## FC5306 Rotors



Angle Rotor (8 × 1.5 ml / 2 ml)  
 Max Speed 6000 rpm, Max RCF 2000 × g, Radius 11 mm  
 Item Number: 30129559  
 Included in package



4 × 0.2 ml PCR8 Angle Rotor  
 Max Speed 6000 rpm, Max RCF 2000 × g  
 Item Number: 30129560  
 Included in package

## Specifications

Model	FC5306	
Rotor	Angle Rotor	Tube Bank Rotor
Rotating Speed Scope	6000 rpm	
Centrifugal Force	2000 × g	
Rotating Direction	Counterclockwise	
Maximum Capacity	8 × 1.5 ml / 2.0 ml	4 × 0.2 ml-PCR 8-tube bank 32 × 0.2 ml single centrifugal tube
Adapter	0.2 ml / 0.5 ml	—
Accelerating Time	≤2 s	
Decelerating Time	≤3 s	
Drive Mode and Motor	Direct drive, with low noise attributable to rolling bearing	
Power Supply	Input: 100-240V ~ 50/60Hz 1.5A Output: 24V --- 2.0A	
Dimensions (W × D × H)	150 × 168 × 128 mm	
Net Weight	1.1 kg (including free-load angle rotor)	
Shipping Dimensions (W × D × H)	216 × 305 × 194 mm	
Shipping Weight	1.9 kg	
Product Safety	IEC/EN 61010-1:2010, IEC/EN 61010-2-020:2006	
Electromagnetic Compatibility	FCC Part 15 Class B, ICES-001 Class B, EN 61326-1:2013, Class B, Basic environments, IEC 61326-1:2012, Class B, Basic environments	

## Ordering information

Category	Description	Item Number
Centrifuge	FC5306 Mini Centrifuge	30129567
Rotor	Angle Rotor (8 × 1.5 ml / 2.0 ml)	30129559
	4 × 0.2 ml PCR8 Angle Rotor	30129560

# Frontier 5513 High-Speed Micro Centrifuge



## Compact Micro Centrifuge with Modern Touch-Wheel Interface Ideal for High-Speed Lab Applications

The FC5513 is a high-speed benchtop microliter centrifuge capable of generating  $17,317 \times g$  with four optional rotors, designed for a range of essential lab applications. Engineered with convenient operation in mind, the FC5513 features a uniquely designed splash-proof front panel with touch-wheel control on an intuitive interface. The compact design saves valuable bench space in the lab.

### Select from a Variety of Rotors Designed for a Range of Lab Applications

The FC5513 offers standard  $24 \times 1.5 / 2$  ml microtube rotors with a biocontainment option. This centrifuge can also support spin columns and hematocrit capillary tubes when used with additional rotor options.

### Modern Touch-Wheel Control on a Sleek Splash-Proof Interface

Designed for ease of operation, the FC5513 features convenient control on a protective splash-proof interface, which allows for responsive operation, even when wearing gloves.

### The Compact Design Saves Valuable Benchtop Space

Enclosing all its functionalities within a small footprint, the FC5513 saves valuable space on the lab bench.

### Solid engineering to ensure functionality and reliability

- True splash-proof panel protects the centrifuge from accidental sample spilling
- Maintenance-free induction motor produces maximum G-force of  $17317 \times g$
- Speeds up to 13500 rpm in less than 15 seconds with microtubes
- 10 acceleration/deceleration settings
- 99 memory sets to quickly store and recall commonly used parameters
- Rotor imbalance sensing systems stops the unit when the loadings are imbalanced

### Flexible rotor selections to cover essential laboratory applications

- Standard offer comes with  $24 \times 1.5 / 2.0$  ml microtube rotors
- Compatible with 4 optional rotors, maximum capacity of  $24 \times 1.5 / 2.0$  ml
- Support spin-column and hematocrit capillary through additional rotor options
- Biocontainment rotor available for safe handling of hazardous samples

### Standard Features Include:

#### Sleekly designed interface enables smooth operation for a great user experience

- Easy-to-Use touch-wheel interface for parameter adjustments
- Convenient interface shows both set and actual parameters
- One-touch toggling between RPM/RCF, Acc/Dec
- Crisp display on a double-line LCD display with backlight

# Frontier 5513 High-Speed Micro Centrifuge

## FC5513 Rotor



24 × 1.5 / 2.0 ml, V2 Angle Rotor  
Max Speed 13500 rpm, Max RCF 17317 × g,  
Radius 11 mm  
Item Number: 30472301



24 × 1.5 / 2.0 ml, BIOSEALS, V2 Angle Rotor  
Max Speed 13500 rpm, Max RCF 17317 × g,  
Radius 11 mm  
Item Number: 30472302



18 × 2 ml SC Angle Rotor  
Max Speed 13500 rpm, Max RCF 15484 × g,  
Item Number: 30472303



24 × Capillaries, V2 Hematocrit Rotor  
Max Speed 13000 rpm, Max RCF 16058 × g  
Item Number: 30472304

## Specifications

Model	FC5513
Speed Range	200 rpm – 13500 rpm; 10 rpm/set
Maximum RCF	17317 × g; 10 × g/set
Maximum Capacity (Rotor)	24 × 1.5/2.0 ml
Temperature Range	Air cool
Running Time	Quick Spin, 10 sec to 99 hr 59 min 59 sec, or continuous
Noise Level	≤ 60 dB(A)
Acc/Dec Levels	10
Allowable Density at Maximum Speed	1.2 g/ml
Allowable Kinetic Energy	2129 Nm
AC Power	120-230 V ~ 50/60 Hz
Voltage Fluctuation	± 10%
Current Consumption	1.9 A
Power Consumption	170 W
Dimensions (W × D × H)	277 × 356 × 236 mm
Net Weight (with rotor)	12.6 kg
Shipping Dimensions (W × D × H)	370 × 470 × 340 mm
Shipping Weight (with rotor)	14 kg
Environment	For indoor use only

## Ordering information

Category	Description	Item Number
Centrifuge	FC5513 Micro Centrifuge 230 V (rotor included)	30370691
	FC5513 Micro Centrifuge 120 V (rotor included)	30370692
	FC5513 Micro Centrifuge 230 V (rotor not included)	30393187
	FC5513 Micro Centrifuge 120 V (rotor not included)	30393188
Rotor	24 × 1.5/2.0 ml Angle Rotor	30472301
	24 × 1.5/2.0 ml Angle Rotor, BIOSEALS	30472302
	18 × 2 ml Angle Rotor, SC-Spin Column	30472303
	Hematocrit rotor, 24 × Capillaries	30472304

# FC5515/FC5515R High-Speed Microliter Centrifuges



## Smooth and Dependable High-Speed Microliter Centrifuge for Liquid Separation Applications

Frontier 5515 and 5515R microliter benchtop centrifuges provide high-speed operation for spin-down applications requiring a wide variety of tube volumes and capacities. With refrigeration capabilities

(FC5515R), 10 acceleration/deceleration settings, multiple safety features, and an unmatched capacity, Frontier provides stable liquid separation for life science applications requiring high-speed operation.

### Easy-to-Use Control Panel that Supports Simple Operation

The intuitive control panel with rotary knob puts the centrifuge's simple operations at your fingertips, including the ability to set and recall speed and g-force, as well as control the temperature (FC5515R only).

### Sophisticated Technology that Drives High-Performance

A powerful brushless induction motor, 10 acceleration and deceleration settings, and memory for up to 99 commonly-used parameters are a few of Frontier's features that propel high-performance.

### Several Safety Features that Protect Against Injury

Among Frontier's safety attributes are a motorized lid locking system and a rotor imbalance sensor that stops the centrifuge if the rotors become imbalanced or sudden shock occurs, protecting the operator from by the high-speed spinning rotors.

### Seven Rotor Sizes that Provide Flexibility for Varied Centrifugation Needs

Compatible with seven different rotors, more than any centrifuge in its class, the highly-versatile Frontier can be used for various applications of different volumes.

Computerized control system provides 10 levels of acceleration or deceleration settings. Store up to 99 sets of centrifugation parameters. Extended timer setting allows centrifuge runs up to 99 hours and 59 minutes.

Powerful and environmental friendly refrigeration system provides wide temperature control range from  $-20^{\circ}\text{C}$  to  $40^{\circ}\text{C}$ . Pre-cool mode is capable to reduce temperature from  $23^{\circ}\text{C}$  to  $4^{\circ}\text{C}$  in 10 minutes. At maximum speed of 15200 RPM, the centrifuge can maintain  $4^{\circ}\text{C}$  throughout experiments (depending on rotor).

#### Safe and Silent

Reliability ensured by multiple safety features including adaptive imbalance monitoring system, explosion-proof housing, over-speed detection.

Maintenance free brushless induction motor reduces maintenance needs and can reach maximum speed in 16 s from stand still.

Silent and compact design reduces noise to less than 60 dB(A) at maximum speed and save benchtop space.

## Standard Features Include:

### Simple and Intuitive

Double line screen with backlight provides rich real-time display of all key status information.

Ergonomic parameter setting interface designed to support instantaneous centrifugal operation.

Built-in rotor parameters enable real-time conversion of speed between RPM and RCF value while RPM/RCF value can be adjusted on-the-fly.

### Powerful and Functional

Up to 7 types of rotor options are available (including air-tight and Snap-on) rotors

Compatible to autoclave sterilization effectively ensure the safety of life science and medical research.

Maximum capacity can process up to  $44 \times 1.5 \text{ ml} / 2 \text{ ml}$  or  $12 \times 5 \text{ ml}$ , effectively increasing the sample through-put.

Compatible to 10 different volumes from 0.2ml to 5ml covers typical laboratory consumables in microliter range.

# FC5515/FC5515R High-Speed Microliter Centrifuges

## FC5515/FC5515R Rotor



24 × 1.5 ml / 2.0 ml Angle Rotor  
 Max Speed 15200 rpm, Max RCF 21953 × g,  
 Radius 11 mm  
 Item Number: 30130870  
 ① The lowest temperature at max speed: 5°C



24 × 1.5 ml / 2.0 ml Angle Rotor, BIOSEALS  
 Max Speed 15200 rpm, Max RCF 21953 × g,  
 Radius 11 mm  
 Item Number: 30130871  
 ① The lowest temperature at max speed: 5°C



30 × 1.5 ml / 2.0 ml Angle Rotor, Sealable  
 Max Speed 13500 rpm, Max RCF 19150 × g,  
 Radius 11 mm  
 Item Number: 30130872  
 ① The lowest temperature at max speed: 6°C



44 × 1.5 ml / 2.0 ml Angle Rotor  
 Max Speed 13500 rpm, Max RCF 17113 / 17317 × g,  
 Radius 11 mm  
 Item Number: 30372717  
 ① The lowest temperature at max speed: 6°C



12 × 5 ml Angle Rotor, Sealable  
 Max Speed 14500 rpm, Max RCF 19978 × g,  
 Radius 17 mm  
 Item Number: 30130873  
 ① The lowest temperature at max speed: 4°C



Angle rotor, 4x8-w PCR Strip  
 Max Speed 15000 rpm, Max RCF 15342 × g,  
 Radius 6.0 mm  
 Item Number: 30130874  
 ① The lowest temperature at max speed: 5°C



Hematocrit rotor, 24 × Capillaries  
 Max Speed 12000 rpm, Max RCF 14811 × g  
 Item Number: 30130881

① The lowest temperature at max speed: defined as the lowest temperature can be reached and maintained when the rotor is running at its maximum speed in the centrifuge with its maximum load capacity and ambient temperature is at 23°C. Lower temperature can still be reached by reducing one or more of the three parameters, speed, ambient temperature, sample load.

# FC5515/FC5515R High-Speed Microliter Centrifuges

## Specifications

Model	FC5515R		FC5515	
Speed Range	200 rpm - 15200 rpm; 10 rpm/set			
Maximum RCF	21953 × g; 10 × g/set			
Maximum Capacity (Rotor)	44 × 1.5 / 2.0 ml; 12 × 5 ml			
Temperature Range	-20°C to 40°C, 1°C/set		Air cool	
Running Time	10 sec to 99 hr 99 min 59 sec or continuous			
Noise Level (varies by rotor)	≤ 57 ± 2 dB(A)		≤ 60 ± 2 dB(A)	
AC Power	230V / 50-60 Hz	120V / 50-60 Hz	230V / 50-60 Hz	120V / 50-60 Hz
Fluctuation	± 10%	± 10%	± 10%	± 10%
Current Consumption	2.4 A	5.1 A	1.3 A	2.3 A
Power Consumption	500 W	560 W	270 W	280 W
ECM	EN/IEC 61326-1 Class B emissions, Basic immunity FCC Class B emissions			
Dimensions (W × D × H)	287 × 561 × 292 mm		287 × 393 × 292 mm	
Net Weight (without rotor)	35 kg		17 kg	
Shipping Dimensions (W × D × H)	400 × 660 × 520 mm		400 × 545 × 410 mm	
Shipping Weight (without rotor)	44 kg		20 kg	

## Ordering information

Category	Description	Item Number
Centrifuge	FC5515 Micro Centrifuge (rotor not included)	30130866
	FC5515R Micro Centrifuge (rotor not included)	30130868
Rotor	24 × 1.5 ml / 2.0 ml Angle Rotor	30130870
	24 × 1.5 ml / 2.0 ml Angle Rotor, BIOSEALS	30130871
	30 × 1.5 ml / 2.0 ml Angle Rotor, Sealable	30130872
	44 × 1.5 ml / 2.0 ml Angle Rotor	30372717
	12 × 5 ml Angle Rotor, Sealable	30130873
	Angle rotor, 4×8-w PCR Strip	30130874
	Hematocrit rotor, 24 × Capillaries	30130881



## FC5706 Multi Centrifuge

### Reliable and Compact Multi-Function Centrifuge For Standard Life Science Separation Applications

Frontier 5706 is a small benchtop multi-function centrifuge ideal for a multitude of spin-down applications. Characterized by reliability, various safety features, the ability to accommodate test tubes of various sizes and intuitive operation, FC5706 was built to meet the basic need for liquid separation in the life sciences.

#### Extremely Simple and Intuitive Operation

With an easy-to-turn control knob, a large LCD display and the capabilities to set and view both speed in rpm and g-force, enjoy precise results and enhanced functionality with extremely simple operation.

#### Compatibility with Test Tubes of Various Sizes

The FC5706 can accommodate all standard tube sizes from 1.5 ml to 50 ml, providing centrifugation for a wide variety of applications. It also has a large capacity, and can hold six 50 ml tubes and twelve 15 ml tubes during one process.

#### Several Safety Features that Protect Against Injury

Among Frontier 5706's safety attributes are sturdy mechanical lid with locking system and a rotor imbalance sensor that stops the centrifuge if the rotors become imbalanced or sudden shock occurs, protecting the operator from being injured by the high-speed spinning rotors.

### Standard Features Include:

#### Intuitive

FC5706 is a general purpose benchtop centrifuge with Compact design which saves space.

Double line screen with backlight provides rich real-time display of all key status information.

Ergonomic parameter setting interface designed to support instantaneous centrifugal operation.

Built-in rotor parameters enable real-time conversion of speed between RPM and RCF value while RPM/RCF value can be adjusted on-the-fly.



#### Practical

Three rotors options are compatible to 7 different volumes from 1.5 ml to 50 ml.

Computerized control system provides 10 levels of acceleration or deceleration settings. Extended timer setting allows centrifuge runs up to 99 hours and 59 minutes.

#### Reliable

Safety features include adaptive imbalance monitoring system and overspeed detection. Noise at maximum speed noise lower than 60dB(A).

# FC5706 Multi Centrifuge

## FC5706 Rotors



6 × 50 ml Angle Rotor  
Max Speed 6000 rpm, Max RCF 4427 × g, Radius 30 mm  
Item Number: 30130878



12 × 15 ml Angle Rotor  
Max Speed 6000 rpm, Max RCF 4427 × g, Radius 17 mm  
Item Number: 30130877



6 × 5 ml Swing Out Rotor  
Max Speed 4000 rpm, Max RCF 1878 × g, Radius 14 mm  
Item Number: 30130880

## Specifications

Model	FC5706	
Speed Range	200 rpm - 6000 rpm; 50 rpm/set	
Maximum RCF	4427 × g; 10 × g/set	
Maximum Capacity (Rotor)	6 × 50 ml	
Temperature range	Air cool	
Running Time	10 sec to 99 hr 99 min 99 sec or continuous	
Noise level (depending on the rotor)	≤ 60 ±2 dB(A)	
AC Power	230 V / 50-60 Hz	120 V / 50-60 Hz
Voltage Fluctuation	± 10 %	
Current Consumption	0.55 A	1.1 A
Power Consumption	100 W	
EMC	EN/IEC 61326-1 Class B emissions, Basic immunity FCC Class B emissions	
Dimensions (W × D × H)	291 × 392 × 266 mm	
Net Weight (without rotor)	10.5 kg	
Shipping Dimensions (W × D × H)	400 × 545 × 410 mm	
Shipping Weight (without rotor)	15 kg	

## Ordering information

Category	Description	Item Number
Centrifuge	FC5706 Multi Centrifuge (rotor not included)	30130875
Rotor	6 × 50 ml Rotor	30130878
	12 × 15 ml Angle Rotor	30130877
	6 × 5 ml Swing Out Rotor	30130880



## FC5707 Multi Centrifuge

### Compact Low-Speed Centrifuge with a Modern Touch-Wheel Interface Ideal for General Lab Applications

Frontier 5707 is a reliable compact low-speed general purpose centrifuge which includes a pre-installed 8 × 15 ml rotor. The rotor can process both round and conical bottom tubes (including common blood tubes), and can also be adapted easily with accessories to process smaller tubes. Designed with convenient operation in mind, the FC5707 features a uniquely designed splash-proof front panel with Touch-Wheel control on an intuitive interface.



### Standard Features Include:

#### Modern Touch-Wheel Control on a Sleek Splash-Proof Interface

Designed for ease of operation, the FC5707 features convenient control on a protective splash-proof interface, which allows for responsive operation—even when wearing gloves.

#### The Compact Design Saves Valuable Benchtop Space

Enclosing all its functionalities within a small footprint, the FC5707 saves valuable space on the lab bench.

#### Easy and Flexible Operation for a Range of Applications

The 8 × 15 ml angle rotor can process both round and conical bottom tubes, including common blood tubes. It can also be adapted for use with smaller tubes such as 7, 5 and 1.5 / 2 ml when used with accessories.



# FC5707 Multi Centrifuge

## FC5707 Rotors



8 × 15 ml Angle Rotor  
 Max Speed 6800 rpm, Max RCF 4445 × g, Radius 13.5 mm  
 Item Number: 30472305

## Specifications

Model	FC5707
Speed Range	200 rpm – 6800 rpm; 10 rpm / set
Maximum RCF	4445 × g; 10 × g / set
Maximum Capacity (Rotor)	8 × 15 ml RB/FA
Temperature Range	Air cool
Running Time	Quick Spin, 10 sec to 99 hr 59 min 59 sec, or continuous
Noise Level	≤ 60 dB(A)
Acc/Dec Levels	10
Allowable Density at Maximum Speed	1.2 g/ml
Allowable Kinetic Energy	845 Nm
AC Power	230 V ~ 50/60 Hz
Voltage Fluctuation	± 10%
Current Consumption	0.8 – 0.4 A
Power Consumption	50 W
Dimensions (W × D × H)	277 × 356 × 236 mm
Net Weight (with rotor)	10 kg
Shipping Dimensions (W × D × H)	370 × 470 × 340 mm
Shipping Weight (with rotor)	11.5 kg
Environment	For indoor use only

## Ordering information

Category	Description	Item Number
Centrifuge	FC5507 Multi Centrifuge 100-230 V (rotor included)	30393189
Rotor	8 × 15 ml Angle Rotor	30472305

## Accessories

Order No.	Description	Vol./Tube	Diameter	Tube type
Without Adapter	Rotor, Angle, 8 × 15 ml Round bottom tubes/Conical bottom tubes	15 ml	17 mm	Round bottom/ Conical bottom
30130889	Adapter, 1 × 7 ml D13.5 mm RB, 2/pk	7 ml	13.5 mm	Round bottom
30130890	Adapter, 1 × 5 ml D13.5 mm RB, 2/pk	5 ml	13.5 mm	Round bottom
30130886	Adapter, 1 × 1.5/2.0 ml D11 mm, 6/pk	1.5 / 2 ml	11 mm	Microtube



## Frontier™ 5000 Multi-Pro Centrifuges



FC5714



FC5718/FC5718R



FC5816/FC5816R



FC5916/FC5916R

### Powerful and Versatile Universal Centrifuges for Virtually Every Lab Application

Frontier 5000 Multi-Pro Centrifuges are designed for universal use in virtually every application in research, industrial & clinical laboratories. Combine with our range of rotors & accessories for customized use in specific applications. Available in 5 models with capacities from low microliter to 6×250 ml - and featuring high speed performance at maximum volume, automatic rotor identification system and safety features, these multi-purpose centrifuges are a must for any lab.

#### Easy-to-Use Control Panel that Supports Simple Operation

The intuitive control panel with rotary knob puts the centrifuge's simple operations at your fingertips, including the ability to set and recall speed and g-force, as well as control the temperature (Refrigerated Model only).

#### Sophisticated Technology that Drives High-Performance

A powerful brushless induction motor, 10 acceleration and deceleration settings, and memory for up to 99 commonly used parameters are a few of Frontier's features that propel high-performance.

#### Several Safety Features that Protect Against Injury

Among Frontier's safety attributes are a motorized lid locking system and a rotor imbalance sensor that stops the centrifuge if the rotors become imbalanced or sudden shock occurs, protecting the operator from by the high-speed spinning rotors.

#### Seven Rotor Sizes that Provide Flexibility for Varied Centrifugation Needs

Compatible with seven different rotors, more than any centrifuge in its class, the highly versatile Frontier can be used for various applications of different volumes.

# FC5714 High-Speed Multi-Pro Centrifuges



## Standard Features Include:

### Compatible to maximum 9 optional rotors

▶ Accommodate 18 different volumes between 0.2-100 ml, covering all standard volumes in a lab

▶ Optional rotor for microtiter plates

▶ Over 77 different accessories to fit different tube types and sizes

4 × 100 ml Covering capacity from microliter to 100 ml

**Capable of high-speed centrifugation up to 18624 × g with micro tubes**

**Dual imbalance sensors**

**Automatic Rotor Recognition**

**Distinct control panel**

▶ Simple one-handed operation

▶ Set and view speed in both rpm and g-force

▶ Control all settings with ergonomic adjustment knob



# FC5714 High-Speed Multi-Pro Centrifuges

## FC5714 Rotors



4x100 ml Swing out rotor  
Max Speed 4500 rpm, Max RCF 3350 × g,  
Radius 46 mm  
Item Number: 30314822  
Auto rotor identification



4x100 ml Swing out rotor, Sealable  
Max Speed 4000 rpm, Max RCF 2486 × g,  
Radius 40 mm  
Item Number: 30314823  
Auto rotor identification



2x3 MTP Swing out rotor  
Max Speed 4500 rpm, Max RCF 2716 × g,  
Radius 11 mm  
Item Number: 30314824  
Auto rotor identification



6x50 ml Angle rotor  
Max Speed 6000 rpm, Max RCF 4427 × g,  
Radius 29 mm  
Item Number: 30314830  
Auto rotor identification



30x15 ml Angle rotor  
Max Speed 4500 rpm, Max RCF 2830 × g,  
Radius 17 mm  
Item Number: 30314832  
Auto rotor identification



12x15 ml Angle rotor  
Max Speed 6000 rpm, Max RCF 4427 × g,  
Radius 17 mm  
Item Number: 30314834  
Auto rotor identification



30x1.5 / 2.0 ml Angle rotor, Sealable  
Max Speed 12000 rpm, Max RCF 15131 × g  
Radius 11 mm  
Item Number: 30314836  
Auto rotor identification



24x1.5 / 2.0 ml Angle rotor  
Max Speed 14000 rpm, Max RCF 18624 × g  
Radius 11 mm  
Item Number: 30314838  
Auto rotor identification



24x1.5 / 2.0 ml Angle rotor, BIOSEALS  
Max Speed 14000 rpm, Max RCF 18624 × g  
Radius 11 mm  
Item Number: 30304361  
Auto rotor identification

# FC5714 High-Speed Multi-Pro Centrifuges

## Specifications

Model	FC5714	
Maximum Speed	14000 rpm, 10 rpm/set	
Maximum RCF	18624 × g, 10 × g/set	
Maximum Capacity	4 × 100 ml	
Temperature range	Air cool	
Running Time	Short Spin, 10 sec to 99 hr 59 min 59 sec, or continuous	
Noise Level (depending on the rotor)	≤ 63 ± 2 dB(A)	
Number of Compatible Rotors	9	
Acc/Dec Levels	10	
Allowable Kinetic Energy	5595 Nm	
AC Power	120V ~ 50/60 Hz	230 V ~ 50/60 Hz
Current Consumption	2.4 A	1.1 A
Power Consumption	300 W	240 W
Voltage Fluctuation	± 10 %	
Dimensions (W × D × H)	362 × 493 × 330 mm	
Net Weight (without rotor)	30 kg	
Environment	For indoor use only	

Product Safety: EN 61010-1; EN 61010-2-020  
EMC: EN 61326-1

## Ordering information

Category	Description	Item Number
Centrifuge	FC5714 Multi-Pro Centrifuge (rotor not included)	30314810
Rotor	4 × 100 ml Swing out rotor	30314822
	4 × 100 ml Swing out rotor, Sealable	30314823
	2 × 3 MTP Swing out rotor	30314824
	6 × 50 ml Angle rotor	30314830
	30 × 15 ml Angle rotor	30314832
	12 × 15 ml Angle rotor	30314834
	30 × 1.5 / 2.0 ml Angle rotor, Sealable	30314836
	24 × 1.5 / 2.0 ml Angle rotor	30314838
	24 × 1.5 / 2.0 ml Angle rotor, BIOSEALS	30304361

# FC5714 High-Speed Multi-Pro Centrifuges

## FC5714 Rotor Competibility Table

FC5714	0.2/0.4 ml	0.5 ml	1.5/2.0 ml	4.5 ml	5 ml	7 ml	10 ml	15 ml	16 ml	25 ml	30 ml	50 ml	85 ml	100 ml	4-10 ml blood tube	5-7 ml blood tube	PCR	MTP
Item: 30314822 For: FC5714 Max Speed: 4500 rpm Max RCF: 3350 × g Auto ID: YES Rotor, Swing out, 4×100ml, ID			▲	▲				▲		▲	▲	▲	▲	●	▲	▲		
Item: 30314823 For: FC5714 Max Speed: 4000 rpm Max RCF: 2486 × g Auto ID: YES Rotor, Swing out, 4×100ml, ID, Sealable			▲				▲	▲		▲	▲	▲	▲	●		▲		
Item: 30314824 For: FC5714 Max Speed: 4500 rpm Max RCF: 2716 × g Auto ID: YES Rotor, Swing out, 2×3MTP, ID			▲															●
Item: 30314830 For: FC5714 Max Speed: 6000 rpm Max RCF: 4427 × g Auto ID: YES Rotor, Angle, 6×50ml RB/FA, ID			▲		▲	▲		▲	▲		▲			●				
Item: 30314832 For: FC5714 Max Speed: 4500 rpm Max RCF: 2830 × g Auto ID: YES Rotor, Angle, 30×15ml RB/FA, ID			▲		▲	▲		●										
Item: 30314834 For: FC5714 Max Speed: 6000 rpm Max RCF: 4427 × g Auto ID: YES Rotor, Angle, 12×15ml RB/FA, ID			▲		▲	▲		●										
Item: 30314836 For: FC5714 Max Speed: 12000 rpm Max RCF: 15131 × g Auto ID: YES Rotor, Angle, 30×1.5/2.0ml, ID, Sealable	▲	▲	●															
Item: 30314838 For: FC5714 Max Speed: 14000 rpm Max RCF: 18624 × g Auto ID: YES Rotor, Angle, 24×1.5 /2.0ml, ID	▲	▲	●															
Item: 30304361 For: FC5714 Max Speed: 14000 rpm Max RCF: 18624 × g Auto ID: YES Rotor, Angle, 24×1.5 / 2.0ml, ID, BIOSEALS	▲	▲	●															

\* Blood collection tube  
ID: auto rotor identification  
Hi: version with higher speed

● Adapter not required ▲ With adapter

# FC5718/FC5718R High-Speed Multi-Pro Centrifuges



## Standard Features Include:

### Compatible to maximum 19 optional rotors

- ▶ Accommodate 19 different volumes between 0.2-100 ml, covering all standard volumes in a lab
- ▶ Optional rotors for 8-well PCR strips, or microtiter plates
- ▶ Over 120 different accessories to fit different tube types and sizes

4 × 100 ml Covering capacity from microliter to 100 ml

**Capable of high-speed centrifugation up to 20984 × g with tubes up to 85 ml**

**Dual imbalance sensors**

**Automatic Rotor Recognition**

**Distinct control panel**

- ▶ Simple one-handed operation
- ▶ Set and view speed in both rpm and g-force
- ▶ Control all settings with ergonomic adjustment knob

**Powerful refrigeration system, temperature variable between -20°C to 40°C (FC5718R only)**



# FC5718/FC5718R High-Speed Multi-Pro Centrifuges

## FC5718/FC5718R Rotors



4x100 ml Swing out rotor  
 Max Speed 4500 rpm, Max RCF 3350 × g,  
 Radius 46 mm  
 Item Number: 30314822  
 Auto rotor identification  
 ① The lowest temperature at max speed: -7°C



4x100 ml Swing out rotor, Sealable  
 Max Speed 5000 rpm, Max RCF 3885 × g,  
 Radius 40 mm  
 Item Number: 30314823  
 Auto rotor identification  
 ① The lowest temperature at max speed: -3°C



2x3 MTP Swing out rotor  
 Max Speed 4500 rpm, Max RCF 2716 × g,  
 Radius 11 mm  
 Item Number: 30314824  
 Auto rotor identification  
 ① The lowest temperature at max speed: -6°C



6x85 ml Angle rotor, Hi  
 Max Speed 11000 rpm, Max RCF 13932 × g,  
 Apply to FC5718  
 Max Speed 13500 rpm, Max RCF 20984 × g  
 Apply to FC5718R  
 Radius 38 mm  
 Item Number: 30314825  
 Auto rotor identification  
 ① The lowest temperature at max speed: 17°C



6x85 ml Angle rotor  
 Max Speed 9000 rpm, Max RCF 10413 × g,  
 Radius 38 mm  
 Item Number: 30314826  
 Auto rotor identification  
 ① The lowest temperature at max speed: -5°C



4x85 ml Angle rotor, Hi  
 Max Speed 12000 rpm, Max RCF 14809 × g,  
 Radius 38 mm  
 Item Number: 30314827  
 Auto rotor identification  
 ① The lowest temperature at max speed: 5°C



10x50 ml Angle rotor, ID  
 Max Speed 7500 rpm, Max RCF 8174 × g  
 Radius 29 mm  
 Item Number: 30314829  
 Auto rotor identification  
 ① The lowest temperature at max speed: 9°C



6x50 ml Angle rotor, ID  
 Max Speed 6000 rpm, Max RCF 4427 × g  
 Radius 29 mm  
 Item Number: 30314830  
 Auto rotor identification  
 ① The lowest temperature at max speed: -8°C



6x50 ml Angle rotor, Hi  
 Max Speed 12000 rpm, Max RCF 13522 × g  
 Radius 29 mm  
 Item Number: 30314831  
 Auto rotor identification  
 ① The lowest temperature at max speed: -5°C



30x15 ml Angle rotor  
 Max Speed 4500 rpm, Max RCF 2830 × g  
 Radius 17 mm  
 Item Number: 30314832  
 Auto rotor identification  
 ① The lowest temperature at max speed: -9°C



20x10 ml Angle rotor, Hi  
 Max Speed 12000 rpm, Max RCF 15775 × g  
 Radius 16 mm  
 Item Number: 30314833  
 Auto rotor identification  
 ① The lowest temperature at max speed: 2°C



12x15 ml Angle rotor, ID  
 Max Speed 6000 rpm, Max RCF 4427 × g  
 Radius 17 mm  
 Item Number: 30314834  
 Auto rotor identification  
 ① The lowest temperature at max speed: -11.5°C

# FC5718/FC5718R High-Speed Multi-Pro Centrifuges

## FC5718/FC5718R Rotors



44x1.5/2.0 ml Angle rotor  
 Max Speed 13500 rpm, Max RCF 17113 × g,  
 Radius 11 mm  
 Item Number: 30372718  
 Auto rotor identification  
 ① The lowest temperature at max speed: 1 °C



30x1.5/2.0 ml Angle rotor, Sealable  
 Max Speed 13000 rpm, Max RCF 17758 × g,  
 Apply to FC5718  
 Max Speed 14000 rpm, Max RCF 20595 × g,  
 Apply to FC5718R  
 Radius 11 mm  
 Item Number: 30314836  
 Auto rotor identification  
 ① The lowest temperature at max speed: 9 °C



24x1.5/2.0 ml Angle rotor  
 Max Speed 14000 rpm, Max RCF 18624 × g,  
 Apply to FC5718  
 Max Speed 15000 rpm, Max RCF 21379 × g,  
 Apply to FC5718R  
 Radius 11 mm  
 Item Number: 30314838  
 Auto rotor identification  
 ① The lowest temperature at max speed: 6 °C



24x1.5/2.0 ml Angle rotor, BIOSEALS  
 Max Speed 14000 rpm, Max RCF 18624 × g,  
 Apply to FC5718  
 Max Speed 15000 rpm, Max RCF 21379 × g,  
 Apply to FC5718R  
 Radius 11 mm  
 Item Number: 30304361  
 Auto rotor identification  
 ① The lowest temperature at max speed: 6 °C



12x1.5/2.0 ml Angle rotor  
 Max Speed 18000 rpm, Max RCF 23542 × g  
 Radius 11 mm  
 Item Number: 30314839  
 Auto rotor identification  
 ① The lowest temperature at max speed: -2 °C



64x0.5 ml Angle rotor  
 Max Speed 13500 rpm, Max RCF 16298 × g  
 Radius 8 mm  
 Item Number: 30314840  
 Auto rotor identification  
 ① The lowest temperature at max speed: 2 °C



Angle rotor, 4 × PCR8 Strip  
 Max Speed 15000 rpm, Max RCF 15343 × g  
 Item Number: 30314841  
 Auto rotor identification  
 ① The lowest temperature at max speed: -1 °C

① The lowest temperature at max speed: defined as the lowest temperature can be reached and maintained when the rotor is running at its maximum speed in the centrifuge with its maximum load capacity and ambient temperature is at 23 °C . Lower temperature can still be reached by reducing one or more of the three parameters, speed, ambient temperature, sample load.

# FC5718/FC5718R High-Speed Multi-Pro Centrifuges

## Specifications

Model	FC5718		FC5718R	
Maximum Speed	18000 rpm, 10 rpm/set			
Maximum RCF	23542 × g, 10 × g/set			
Maximum Capacity	4 × 100 ml			
Temperature range	Air cool		-20~40 °C	
Running Time	Short Spin, 10 sec to 99 hr 59 min 59 sec, or continuous			
Noise level (depending on the rotor)	≤ 60 ± 2 dB(A)			
Number of Compatible Rotors	19			
Acc/Dec Levels	10			
Allowable kinetic energy	16672 Nm		25111 Nm	
AC Power	120V ~ 50/60 Hz	230 V ~ 50/60 Hz	120V ~ 50/60 Hz	230 V ~ 50/60 Hz
Current Consumption	4.0 A	2.0 A	6.0 A	3.0 A
Power Consumption	475 W	455 W	660 W	660 W
Voltage Fluctuation	± 10 %			
Dimensions (W × D × H)	408 × 499 × 351 mm		407 × 731 × 359 mm	
Net Weight (without rotor)	43 kg		60 kg	
Environment	For indoor use only			

Product safety: EN 61010-1: 2010、EN 61010-2-020: 2006  
EMC: EN 61326-1: 2013, FCC Part 15 Class B.

## Ordering information

Category	Description	Item Number
Centrifuge	FC5718 Multi-Pro Centrifuge (rotor not included)	30314812
	FC5718R Multi-Pro Centrifuge (rotor not included)	30314814
Rotors	4 × 100 ml Swing out rotor	30314822
	4 × 100 ml Swing out rotor, Sealable	30314823
	2 × 3 MTP Swing out rotor	30314824
	6 × 85 ml Angle rotor, Hi	30314825
	6 × 85 ml Angle rotor	30314826
	4 × 85 ml Angle rotor, Hi	30314827
	10 × 50 ml Angle rotor, ID	30314829
	6 × 50 ml Angle rotor, ID	30314830
	6 × 50 ml Angle rotor, Hi	30314831
	30 × 15 ml Angle rotor	30314832
	20 × 10 ml Angle rotor, Hi	30314833
	12 × 15 ml Angle rotor, ID	30314834

Category	Description	Item Number
Rotors	44 × 1.5 / 2.0 ml Angle rotor	30372718
	30 × 1.5 / 2.0 ml Angle rotor, Sealable	30314836
	24 × 1.5 / 2.0 ml Angle rotor	30314838
	24 × 1.5 / 2.0 ml Angle rotor, BIOSEALS	30304361
	12 × 1.5 / 2.0 ml Angle rotor	30314839
	64 × 0.5 ml Angle rotor	30314840
	Angle rotor, 4×PCR8 Strip	30314841

# FC5718/FC5718R High-Speed Multi-Pro Centrifuges

## FC5718/FC5718R Rotor Competibility Table

FC5718/FC5718R		0.2/0.4 ml	0.5 ml	1.5/2.0 ml	4.5 ml	5 ml	7 ml	10 ml	15 ml	16 ml	25 ml	30 ml	50 ml	85 ml	100 ml	4-10 ml blood tube	5-7 ml blood tube	PCR	MTP
Item:	30314822			▲	▲				▲		▲	▲	▲	▲	●	▲	▲		
For:	FC5718/FC5718R																		
Max Speed:	4500 rpm/4500 rpm																		
Max RCF:	3350 × g/3350 × g																		
Auto ID:	YES/YES																		
Rotor, Swing out, 4x100 ml, ID																			
Item:	30314823			▲				▲	▲		▲	▲	▲	▲	●		▲		
For:	FC5718/FC5718R																		
Max Speed:	5000 rpm/5000 rpm																		
Max RCF:	3885 × g/3885 × g																		
Auto ID:	YES/YES																		
Rotor, Swing out, 4x100 ml, ID, Sealable																			
Item:	30314824			▲															●
For:	FC5718/FC5718R																		
Max Speed:	4500 rpm/4500 rpm																		
Max RCF:	2716 × g/2716 × g																		
Auto ID:	YES/YES																		
Rotor, Swing out, 2x3 MTP, ID																			
Item:	30314825								▲	▲		▲	▲		●				
For:	FC5718/FC5718R																		
Max Speed:	11000 rpm/13500 rpm																		
Max RCF:	13932 × g/20984 × g																		
Auto ID:	YES/YES																		
Rotor, Angle, 6x85 ml RB, ID, Hi																			
Item:	30314826								▲	▲		▲	▲		●				
For:	FC5718/FC5718R																		
Max Speed:	9000 rpm/9000 rpm																		
Max RCF:	10413 × g/10413 × g																		
Auto ID:	YES/YES																		
Rotor, Angle, 6x85 ml RB, ID																			
Item:	30314827								▲	▲		▲	▲		●				
For:	FC5718/FC5718R																		
Max Speed:	12000 rpm/12000 rpm																		
Max RCF:	14809 × g/14809 × g																		
Auto ID:	YES/YES																		
Rotor, Angle, 4x85 ml RB, ID, Hi																			
Item:	30314829			▲		▲	▲		▲						●				
For:	FC5718/FC5718R																		
Max Speed:	7500 rpm/7500 rpm																		
Max RCF:	8174 × g/8174 × g																		
Auto ID:	YES/YES																		
Rotor, Angle, 10x50 ml FA, ID																			
Item:	30314830			▲		▲	▲		▲	▲		▲			●				
For:	FC5718/FC5718R																		
Max Speed:	6000 rpm/6000 rpm																		
Max RCF:	4427 × g/4427 × g																		
Auto ID:	YES/YES																		
Rotor, Angle, 6x50 ml RB/FA, ID																			
Item:	30314831								▲	▲		▲			●				
For:	FC5718/FC5718R																		
Max Speed:	12000 rpm/12000 rpm																		
Max RCF:	13522 × g/13522 × g																		
Auto ID:	YES/YES																		
Rotor, Angle, 6x50 ml RB, ID, Hi																			
Item:	30314832			▲		▲	▲		●										
For:	FC5718/FC5718R																		
Max Speed:	4500 rpm/4500 rpm																		
Max RCF:	2830 × g/2830 × g																		
Auto ID:	YES/YES																		
Rotor, Angle, 30x15ml RB/FA, ID																			

\* Blood collection tube  
 ID: auto rotor identification  
 Hi: version with higher speed

(Continue on next page)

● Adapter not required      ▲ With adapter

# FC5718/FC5718R High-Speed Multi-Pro Centrifuges

## FC5718/FC5718R Rotor Competibility Table

FC5718/FC5718R		0.2/0.4 ml	0.5 ml	1.5/2.0 ml	4.5 ml	5 ml	7 ml	10 ml	15 ml	16 ml	25 ml	30 ml	50 ml	85 ml	100 ml	4-10 ml blood tube	5-7 ml blood tube	PCR	MTP
Item:	30314833																		
For:	FC5718/FC5718R																		
Max Speed:	12000 rpm/12000 rpm																		
Max RCF:	15775 × g/15775 × g							●											
Auto ID:	YES/YES																		
Rotor, Angle, 20×10 ml RB, ID, Hi																			
Item:	30314834																		
For:	FC5718/FC5718R																		
Max Speed:	6000 rpm/6000 rpm																		
Max RCF:	4427 × g/4427 × g			▲		▲	▲		●										
Auto ID:	YES/YES																		
Rotor, Angle, 12×15 ml RB/FA, ID																			
Item:	30372718																		
For:	FC5718/FC5718R																		
Max Speed:	13500 rpm/13500 rpm																		
Max RCF:	17113 × g/17113 × g	▲	▲	●															
Auto ID:	YES/YES																		
Rotor, Angle, 44×1.5/2.0 ml, ID																			
Item:	30314836																		
For:	FC5718/FC5718R																		
Max Speed:	13000 rpm/14000 rpm																		
Max RCF:	17758 × g/20595 × g	▲	▲	●															
Auto ID:	YES/YES																		
Rotor, Angle, 30×1.5/2.0 ml, ID, Sealable																			
Item:	30314838																		
For:	FC5718/FC5718R																		
Max Speed:	14000 rpm/15000 rpm																		
Max RCF:	18624 × g/21379 × g	▲	▲	●															
Auto ID:	YES/YES																		
Rotor, Angle, 24×1.5/2.0 ml, ID																			
Item:	30304361																		
For:	FC5718/FC5718R																		
Max Speed:	14000 rpm/15000 rpm																		
Max RCF:	18624 × g/21379 × g	▲	▲	●															
Auto ID:	YES/YES																		
Rotor, Angle, 24×1.5/2.0ml, ID, BIOSEALS																			
Item:	30314839																		
For:	FC5718/FC5718R																		
Max Speed:	18000 rpm/18000 rpm																		
Max RCF:	23542 × g/23542 × g	▲	▲	●															
Auto ID:	YES/YES																		
Rotor, Angle, 12×1.5/2.0 ml, ID																			
Item:	30314840																		
For:	FC5718/FC5718R																		
Max Speed:	13500 rpm/13500 rpm																		
Max RCF:	16298 × g/16298 × g	●																	
Auto ID:	YES/YES																		
Rotor, Angle, 64×0.5 ml, ID																			
Item:	30314841																		
For:	FC5718/FC5718R																		
Max Speed:	15000 rpm/15000 rpm																		
Max RCF:	15343 × g/15343 × g																	●	
Auto ID:	YES/YES																		
Rotor, Angle, 4×8-w PCR Strip, ID																			

\* Blood collection tube  
 ID: auto rotor identification  
 Hi: version with higher speed

● Adapter not required    ▲ With adapter

Centrifuge

# FC5816/FC5816R High-Speed Multi-Pro Centrifuges



## Standard Features Include:

### Compatible to maximum 13 optional rotors

- ▶ Accommodate 19 different volumes between 0.2-250 ml, covering all standard volumes in a lab
- ▶ Optional rotor for microtiter plates
- ▶ Over 70 different accessories to fit different tube types and sizes
- ▶ High throughput rotor for 15 mL, 50 ml conical tubes and 4-10 ml, 5-7 ml blood collection tubes

### Covering capacity from low microliter to 6 × 250 ml

Capable of high-speed centrifugation, up to 21726 × g with tubes up to 85 ml, and up to 10016 × g with tubes up to 250 ml (10016 × g)

### Dual imbalance sensors

### Automatic Rotor Recognition

### Distinct control panel

- ▶ Simple one-handed operation
- ▶ Set and view speed in both rpm and g-force
- ▶ Control all settings with ergonomic adjustment knob

### Powerful refrigeration system, temperature variable between

-20°C to 40°C (FC5816R only)



# FC5816/FC5816R High-Speed Multi-Pro Centrifuges

## FC5816/FC5816R Rotors



4x250 ml Swing out rotor  
Max Speed 4500 rpm, Max RCF 3780 × g,  
Radius 62 mm  
Item Number: 30314820  
Auto rotor identification  
① The lowest temperature at max speed: -2°C



2x3 MTP Swing out rotor  
Max Speed 4500 rpm, Max RCF 2716 × g,  
Radius 11 mm  
Item Number: 30314824  
Auto rotor identification  
① The lowest temperature at max speed: -3°C



16x50 ml Swing out rotor  
Max Speed 4500 rpm, Max RCF 3735 × g,  
Radius 29 mm  
Item Number: 30314828  
Auto rotor identification  
① The lowest temperature at max speed: 2°C



6x250 ml Angle rotor  
Max Speed 8000 rpm, Max RCF 10016 × g,  
Radius 62 mm  
Item Number: 30314821  
Auto rotor identification  
① The lowest temperature at max speed: 3°C



6x85 ml Angle rotor  
Max Speed 11000 rpm, Max RCF 15555 × g,  
Apply to FC5816  
Max Speed 13000 rpm, Max RCF 21726 × g,  
Apply to FC5816R  
Radius 38 mm  
Item Number: 30314826  
Auto rotor identification  
① The lowest temperature at max speed: 15°C



4x85 ml Angle rotor, Hi  
Max Speed 12000 rpm, Max RCF 14809 × g,  
Radius 38 mm  
Item Number: 30314827  
Auto rotor identification  
① The lowest temperature at max speed: 5°C



10x50 ml Angle rotor  
Max Speed 9000 rpm, Max RCF 11771 × g,  
Apply to FC5816  
Max Speed 10500 rpm, Max RCF 16022 × g,  
Apply to FC5816R  
Radius 29 mm  
Item Number: 30314829  
Auto rotor identification  
① The lowest temperature at max speed: 9°C



6x50 ml Angle rotor, Hi  
Max Speed 13000 rpm, Max RCF 15869 × g  
Radius 29 mm  
Item Number: 30314831  
Auto rotor identification  
① The lowest temperature at max speed: 0°C



30x15 ml Angle rotor  
Max Speed 4500 rpm, Max RCF 2830 × g  
Radius 17 mm  
Item Number: 30314832  
Auto rotor identification  
① The lowest temperature at max speed: -12°C



20x10 ml Angle rotor, Hi  
Max Speed 12000 rpm, Max RCF 15775 × g  
Radius 16 mm  
Item Number: 30314833  
Auto rotor identification  
① The lowest temperature at max speed: 0°C



44x1.5/2.0 ml Angle rotor  
Max Speed 15000 rpm, Max RCF 21128 × g,  
Apply to FC5816  
Max Speed 16000 rpm, Max RCF 24039 × g,  
Apply to FC5816R  
Radius 11 mm  
Item Number: 30372718  
Auto rotor identification  
① The lowest temperature at max speed: 8°C



24x1.5/2.0 ml Angle rotor  
Max Speed 15000 rpm, Max RCF 21379 × g,  
Apply to FC5718  
Max Speed 16000 rpm, Max RCF 24325 × g,  
Apply to FC5718R  
Radius 11 mm  
Item Number: 30314838  
Auto rotor identification  
① The lowest temperature at max speed: 3°C

# FC5816/FC5816R High-Speed Multi-Pro Centrifuges

## FC5816/FC5816R Rotors



24×1.5 / 2.0 ml Angle rotor, BIOSEALS  
 Max Speed 15000 rpm, Max RCF 21379 × g,  
 Apply to FC5816  
 Max Speed 16000 rpm, Max RCF 24325 × g,  
 Apply to FC5816R  
 Radius 11 mm  
 Item Number: 30304361  
 Auto rotor identification  
 ①The lowest temperature at max speed: 3°C

①The lowest temperature at max speed: defined as the lowest temperature can be reached and maintained when the rotor is running at its maximum speed in the centrifuge with its maximum load capacity and ambient temperature is at 23°C. Lower temperature can still be reached by reducing one or more of the three parameters, speed, ambient temperature, sample load.

## Specifications

Model	FC5816		FC5816R	
Maximum Speed	15000 rpm, 10 rpm/set		16000 rpm, 10 rpm/set	
Maximum RCF	21379 × g, 10 × g/set		24325 × g, 10 × g/set	
Maximum Capacity	6 × 250 ml			
Temperature range	Air cool		-20°C~40 °C	
Running Time	Short Spin, 10 sec to 99 hr 59 min 59 sec, or continuous			
Noise level (depending on the rotor)	≤ 61 ± 2 dB(A)		≤ 63 ± 2 dB(A)	
Number of Compatible Rotors	13			
Acc/Dec Levels	10			
Allowable kinetic energy	34363 Nm			
AC Power	120V ~ 50/60 Hz	230 V ~ 50/60 Hz	120V ~ 50/60 Hz	230 V ~ 50/60 Hz
Current Consumption	4.2 A	2.4 A	7.8 A	3.7 A
Power Consumption	530 W	850 W	850 W	785 W
Voltage Fluctuation	± 10 %			
Dimensions (W × D × H)	446 × 538 × 354 mm		723 × 538 × 354 mm	
Net Weight (without rotor)	52 kg		77 kg	
Environment	For indoor use only			

Product safety: EN 61010-1: 2010、EN 61010-2-020: 2006

EMC: EN 61326-1: 2013, FCC Part 15 Class B.

## Ordering information

Category	Description	Item Number
Centrifuge	FC5816 Multi-Pro Centrifuge (rotor not included)	30314816
	FC5816R Multi-Pro Centrifuge (rotor not included)	30314818
Rotor	4 × 250 ml Swing out rotor	30314820
	2 × 3 MTP Swing out rotor	30314824
	16 × 50 ml Swing out rotor	30314828
	6 × 250 ml Angle rotor	30314821

Category	Description	Item Number
Rotor	6 × 85 ml Angle rotor	30314826
	4 × 85 ml Angle rotor, Hi	30314827
	10 × 50 ml Angle rotor	30314829
	6 × 50 ml Angle rotor, Hi	30314831
	30 × 15 ml Angle rotor	30314832
	20 × 10 ml Angle rotor, Hi	30314833
	44 × 1.5 / 2.0 ml Angle rotor	30372718
	24 × 1.5 / 2.0 ml Angle rotor	30314838
	24 × 1.5 / 2.0 ml Angle rotor, BIOSEALS	30304361

# FC5816/FC5816R High-Speed Multi-Pro Centrifuges

## FC5816/FC5816R Competibility Table

FC5816/FC5816R			0.2/ 0.4 ml	0.5 ml	1.5/ 2.0 ml	4.5 ml	5 ml	7 ml	10 ml	15 ml	16 ml	25 ml	30 ml	50 ml	85 ml	100 ml	175/ 225 ml	250 ml	4- 10 ml <sup>†</sup>	5- 7 ml <sup>‡</sup>	PCR	MTP
<b>Swing out rotor, 4 × 250 ml, ID</b>																						
Item	30314820																					
For	FC5816	FC5816R			▲				▲	▲		▲		▲		▲		●	▲	▲		
Max Speed	4500 rpm	4500 rpm																				
Max RCF	3780 × g	3780 × g																				
<b>Swing out rotor, 2 × 3 MTP, ID</b>																						
Item	30314824																					
For	FC5816	FC5816R			▲																	●
Max Speed	4500 rpm	4500 rpm																				
Max RCF	2716 × g	2716 × g																				
<b>Swing out rotor, 16 × 50 ml, ID</b>																						
Item	30314828																					
For	FC5816	FC5816R								▲				●					▲	▲		
Max Speed	4500 rpm	4500 rpm																				
Max RCF	3735 × g	3735 × g																				
<b>Angle rotor, 6 × 250 ml, ID</b>																						
Item	30314821																					
For	FC5816	FC5816R			▲				▲	▲			▲	▲		▲		●				
Max Speed	8000 rpm	8000 rpm																				
Max RCF	10016 × g	10016 × g																				
<b>Angle rotor, 6 × 85 ml, ID</b>																						
Item	30314826																					
For	FC5816	FC5816R								▲	▲		▲	▲	●							
Max Speed	11000 rpm	13000 rpm																				
Max RCF	15555 × g	21726 × g																				
<b>Angle rotor, 4 × 85 ml, ID, Hi</b>																						
Item	30314827																					
For	FC5816	FC5816R								▲			▲	▲	●							
Max Speed	12000 rpm	12000 rpm																				
Max RCF	14809 × g	14809 × g																				
<b>Angle rotor, 10 × 50 ml, ID</b>																						
Item	30314829																					
For	FC5816	FC5816R			▲		▲	▲		▲				●								
Max Speed	9000 rpm	10500 rpm																				
Max RCF	11771 × g	16022 × g																				
<b>Angle rotor, 6 × 50 ml, ID, Hi</b>																						
Item	30314831																					
For	FC5816	FC5816R								▲	▲		▲	●								
Max Speed	13000 rpm	13000 rpm																				
Max RCF	15869 × g	15869 × g																				
<b>Angle rotor, 30 × 15 ml, ID</b>																						
Item	30314832																					
For	FC5718	FC5718R			▲		▲	▲		●												
Max Speed	4500 rpm	4500 rpm																				
Max RCF	2830 × g	2830 × g																				

(Continue on next page)

\* Blood collection tube  
ID: auto rotor identification  
Hi: version with higher speed

● Adapter not required ▲ With adapter

# FC5816/FC5816R High-Speed Multi-Pro Centrifuges

## FC5816/FC5816R Competibility Table

FC5816/FC5816R		0.2/ 0.4 ml	0.5 ml	1.5/ 2.0 ml	4.5 ml	5 ml	7 ml	10 ml	15 ml	16 ml	25 ml	30 ml	50 ml	85 ml	100 ml	175/ 225 ml	250 ml	4- 10 ml*	5- 7 ml*	PCR	MTP
Angle rotor, 20 × 10 ml, ID, Hi																					
Item	30314833																				
For	FC5816							●													
Max Speed	12000 rpm																				
Max RCF	15775 × g																				
Angle rotor, 44 × 1.5/2.0 ml, ID																					
Item	30372718																				
For	FC5816		▲	▲				●													
Max Speed	15000 rpm																				
Max RCF	21128 × g																				
Angle rotor, 24 × 1.5/2.0 ml, ID																					
Item	30314838																				
For	FC5816		▲	▲				●													
Max Speed	15000 rpm																				
Max RCF	21379 × g																				
Angle rotor, 24 × 1.5/2.0 ml, ID, BIOSEALS																					
Item	30304361																				
For	FC5816		▲	▲				●													
Max Speed	15000 rpm																				
Max RCF	21379 × g																				

\* Blood collection tube  
 ID: auto rotor identification  
 Hi: version with higher speed

● Adapter not required      ▲ With adapter



## FC5916/FC5916R High-Speed Multi-Pro Centrifuges

### Standard Features Include:

- ▶ Compatible with up to 14 optional rotors and 75 accessories
- ▶ Capacities from microliter to 4 × 750 ml
- ▶ Improved sample processing through-put with additional rotor for blood collection tubes and standard conical tubes
- ▶ High-speed centrifugation (>10000 rpm) from 0.2 ml up to 85 ml tubes
- ▶ Temperature variable range of -20 °C to 40 °C (FC5916R only)



# FC5916/FC5916R High-Speed Multi-Pro Centrifuges

## FC5916/FC5916R Rotors



24x1.5 / 2.0 ml Angle rotor, Sealable  
 Max Speed 16000 rpm, Max RCF 24325 × g,  
 Radius 11 mm  
 Item Number: 30304361  
 Auto rotor identification  
 ① The lowest temperature at max speed: 3 °C



6x250 ml Angle rotor  
 Max Speed 8000 rpm, Max RCF 10016 × g,  
 Radius 62 mm  
 Item Number: 30314821  
 Auto rotor identification  
 ① The lowest temperature at max speed: 3 °C



2x3 MTP Swing out rotor  
 Max Speed 4500 rpm, Max RCF 2716 × g,  
 Radius 11 mm  
 Item Number: 30314824  
 Auto rotor identification  
 ① The lowest temperature at max speed: -3 °C



6x85 ml Angle rotor  
 Max Speed 11000 rpm, Max RCF 15555 × g,  
 Apply to FC5916  
 Max Speed 13000 rpm, Max RCF 21726 × g,  
 Apply to FC5916R  
 Radius 38 mm  
 Item Number: 30314826  
 Auto rotor identification  
 ① The lowest temperature at max speed: 15 °C



4x85 ml Angle rotor, Hi  
 Max Speed 15000 rpm, Max RCF 23140 × g,  
 Apply to FC5916  
 Max Speed 16000 rpm, Max RCF 26328 × g,  
 Apply to FC5916R  
 Radius 38 mm  
 Item Number: 30314827  
 Auto rotor identification  
 ① The lowest temperature at max speed: 5 °C



10x50 ml Angle rotor  
 Max Speed 10000 rpm, Max RCF 14532 × g,  
 Apply to FC5916  
 Max Speed 10500 rpm, Max RCF 16022 × g,  
 Apply to FC5916R  
 Radius 29 mm  
 Item Number: 30314829  
 Auto rotor identification  
 ① The lowest temperature at max speed: 9 °C



6x50 ml Angle rotor, Hi  
 Max Speed 13000 rpm, Max RCF 15869 × g  
 Radius 29 mm  
 Item Number: 30314831  
 Auto rotor identification  
 ① The lowest temperature at max speed: 0 °C



20x10 ml Angle rotor, Hi  
 Max Speed 12000 rpm, Max RCF 15775 × g  
 Radius 16 mm  
 Item Number: 30314833  
 Auto rotor identification  
 ① The lowest temperature at max speed: 0 °C



44x1.5/2.0 ml Angle rotor  
 Max Speed 16000 rpm, Max RCF 24325 × g,  
 Radius 11 mm  
 Item Number: 30372718  
 Auto rotor identification  
 ① The lowest temperature at max speed: 8 °C



30x1.5/2.0 ml Angle rotor, Sealable  
 Max Speed 15000 rpm, Max RCF 23643 × g,  
 Radius 11 mm  
 Item Number: 30314836  
 Auto rotor identification  
 ① The lowest temperature at max speed: 9 °C



24x1.5/2.0 ml Angle rotor  
 Max Speed 16000 rpm, Max RCF 24325 × g,  
 Radius 11 mm  
 Item Number: 30314838  
 Auto rotor identification  
 ① The lowest temperature at max speed: 3 °C



Angle rotor, 4xPCR8 Strip  
 Max Speed 15000 rpm, Max RCF 15343 × g  
 Item Number: 30314841  
 Auto rotor identification  
 ① The lowest temperature at max speed: -1 °C

# FC5916/FC5916R High-Speed Multi-Pro Centrifuges

## FC5916/FC5916R Rotors



4x750 ml Swing out rotor  
 Max Speed 4000 rpm, Max RCF 3434 × g,  
 Radius 99 mm  
 Item Number: 30553085  
 Auto rotor identification

① The lowest temperature at max speed: °C



4x500 ml Angle rotor  
 Max Speed 8000 rpm, Max RCF 10367 × g,  
 Radius 96 mm  
 Item Number: 30553086  
 Auto rotor identification

① The lowest temperature at max speed: °C

① The lowest temperature at max speed: defined as the lowest temperature can be reached and maintained when the rotor is running at its maximum speed in the centrifuge with its maximum load capacity and ambient temperature is at 23 °C. Lower temperature can still be reached by reducing one or more of the three parameters, speed, ambient temperature, sample load.

## Specifications

Model	FC5916		FC5916R	
Maximum Speed	16000 rpm, 10 rpm/set			
Maximum RCF	24325 × g, 10 × g/set		26331 × g, 10 × g/set	
Maximum Capacity	4 × 750 ml			
Temperature range	Air cool		-20 °C ~ 40 °C	
Running Time	Short Spin, 10 sec to 99 hr 59 min 59 sec, or continuous			
Noise level (depending on the rotor)	≤ 63 ± 2 dB(A)			
Number of Compatible Rotors	14			
Acc/Dec Levels	10			
Allowable kinetic energy	60629 Nm		54458 Nm	
AC Power	120V ~ 50/60 Hz	230 V ~ 50/60 Hz	120V ~ 50/60 Hz	230 V ~ 50/60 Hz
Current Consumption	5.6 A	2.8 A	80 A	7.2 A
Power Consumption	640 W	680 W	1630 W	1750 W
Voltage Fluctuation	± 10 %			
Dimensions (W × D × H)	780 × 670 × 590 mm		900 × 750 × 560 mm	
Net Weight (without rotor)	98 kg		137 kg	
Environment	For indoor use only			

Product safety: EN 61010-1: 2010, EN 61010-2-020: 2006  
 EMC: EN 61326-1: 2013, FCC Part 15 Class B.

## Ordering information

Category	Description	Item Number
Centrifuge	FC5916 Multi-Pro Centrifuge (rotor not included)	30553036
	FC5916R Multi-Pro Centrifuge (rotor not included)	30553101
Rotor	6 × 250 ml Angle rotor	30314821
	2 × 3 MTP Swing out rotor	30314824
	6 × 85 ml Angle rotor	30314826
	4 × 85 ml Angle rotor, Hi	30314827
	10 × 50 ml Angle rotor	30314829

Category	Description	Item Number
Rotor	6 × 50 ml Angle rotor, Hi	30314831
	20 × 10 ml Angle rotor, Hi	30314833
	44 × 1.5 / 2.0 ml Angle rotor	30372718
	30 × 1.5 / 2.0 ml Angle rotor, Sealable	30314836
	24 × 1.5 / 2.0 ml Angle rotor	30314838
	Angle rotor, 4 × PCR8 Strip	30314841
	Rotor, Swing Out, 4 × 750 ml, ID, Sealable	30553085
	Rotor, Angle, 4 × 500 ml, ID	30553086
	24 × 1.5 / 2.0 ml Angle rotor, BIOSEALS	30304361

# FC5916/FC5916R High-Speed Multi-Pro Centrifuges

## FC5916/FC5916R Competibility Table

FC5916/FC5916R		0.2/ 0.4 ml	0.5 ml	1.5/ 2.0 ml	4.5 ml	5 ml	7 ml	10 ml	15 ml	16 ml	25 ml	30 ml	50 ml	85 ml	100 ml	175/ 225 ml	250 ml	500 ml	750 ml	4- 10 ml*	5- 7 ml*	PCR	MTP
<b>Angle rotor, 24 × 1.5/2.0 ml, ID, BIOSEALS</b>																							
Item	30304361																						
For	FC5916	FC5916R	▲	▲	●																		
Max Speed	16000 rpm	16000 rpm																					
Max RCF	24325 × g	24325 × g																					
<b>Angle rotor, 6 × 250 ml, ID</b>																							
Item	30314821																						
For	FC5916	FC5916R		▲			▲	▲				▲	▲				●						
Max Speed	8000 rpm	8000 rpm																					
Max RCF	10016 × g	10016 × g																					
<b>Swing out rotor, 2 × 3 MTP, ID</b>																							
Item	30314824																						
For	FC5916	FC5916R		▲																			●
Max Speed	4500 rpm	4500 rpm																					
Max RCF	2716 × g	2716 × g																					
<b>Angle rotor, 6 × 85 ml, ID</b>																							
Item	30314826																						
For	FC5916	FC5916R							▲	▲		▲	▲	●									
Max Speed	11000 rpm	13000 rpm																					
Max RCF	15555 × g	21726 × g																					
<b>Angle rotor, 4 × 85 ml, ID, Hi</b>																							
Item	30314827																						
For	FC5916	FC5916R							▲			▲	▲	●									
Max Speed	15000 rpm	16000 rpm																					
Max RCF	23140 × g	26328 × g																					
<b>Angle rotor, 10 × 50 ml, ID</b>																							
Item	30314829																						
For	FC5916	FC5916R		▲		▲	▲		▲				●										
Max Speed	10000 rpm	10500 rpm																					
Max RCF	14532 × g	16022 × g																					
<b>Angle rotor, 6 × 50 ml, ID, Hi</b>																							
Item	30314831																						
For	FC5916	FC5916R							▲	▲		▲	●										
Max Speed	13000 rpm	13000 rpm																					
Max RCF	15869 × g	15869 × g																					
<b>Angle rotor, 20 × 10 ml, ID, Hi</b>																							
Item	30314833																						
For	FC5916	FC5916R																					
Max Speed	12000 rpm	12000 rpm																					
Max RCF	15775 × g	15775 × g																					

(Continue on next page)

\* Blood collection tube  
 ID: auto rotor identification  
 Hi: version with higher speed

● Adapter not required ▲ With adapter

# FC5916/FC5916R High-Speed Multi-Pro Centrifuges

## FC5916/FC5916R Competibility Table

FC5916/FC5916R		0.2/ 0.4 ml	0.5 ml	1.5/ 2.0 ml	4.5 ml	5 ml	7 ml	10 ml	15 ml	16 ml	25 ml	30 ml	50 ml	85 ml	100 ml	175/ 225 ml	250 ml	500 ml	750 ml	4-10 ml*	5-7 ml*	PCR	MTP
<b>Angle rotor, 44 x 1.5/2.0 ml, ID</b>																							
Item	30372718																						
For	FC5916	FC5916R	▲	▲	●																		
Max Speed	16000 rpm	16000 rpm																					
Max RCF	24325 x g	24325 x g																					
<b>Angle rotor, 30 x 1.5/2.0ml, ID, Sealable</b>																							
Item	30314836																						
For	FC5916	FC5916R	▲	▲	●																		
Max Speed	15000 rpm	15000 rpm																					
Max RCF	23643 x g	23643 x g																					
<b>Angle rotor, 24 x 1.5/2.0 ml, ID</b>																							
Item	30314838																						
For	FC5916	FC5916R	▲	▲	●																		
Max Speed	16000 rpm	16000 rpm																					
Max RCF	24325 x g	24325 x g																					
<b>Swing out rotor, 16 x 50 ml, ID</b>																							
Item	30314841																						
For	FC5916	FC5916R																				●	
Max Speed	15000 rpm	15000 rpm																					
Max RCF	15343 x g	15343 x g																					
<b>Rotor, Swing Out, 4 x 750 ml, ID, Sealable</b>																							
Item	30553085																						
For	FC5916	FC5916R					▲	▲	▲			▲	▲		▲	▲	▲	▲	▲	▲	●		▲
Max Speed	4000 rpm	4500 rpm																					
Max RCF	3434 x g	4346 x g																					
<b>Angle rotor, 4 x 500 ml, ID</b>																							
Item	305530856																						
For	FC5916	FC5916R						▲				▲	▲		▲	▲	●						
Max Speed	8000 rpm	8000 rpm																					
Max RCF	10367 x g	10367 x g																					

\* Blood collection tube  
ID: auto rotor identification  
Hi: version with higher speed

● Adapter not required    ▲ With adapter

# Bench Scales





## Bench Scales

Defender® 5000

Defender® 3000

Defender® 2000

Ranger® 7000 & Ranger® 4000

Ranger® 3000 & Ranger® 2000

Ranger® 1000 & Valor® 7000

Valor® 4000

FD

Valor® 3000

Valor® 2000

Valor® 1000

# Defender® 5000 WASH DOWN BENCH SCALES



Multifunctional Stainless Steel Washdown

Bench Scale for Standard Industrial Applications

- User-friendly model with an easy-to-use keypad, large backlit display and plain text on-screen prompts which guide you through operation.
- Durably constructed of a stainless steel platform, frame & IP68 indicator; IP67 stainless steel loadcell (NTEP/MC/OIML/EC Type single range) or aluminum load cell (OIML/EC Type dual range)
- Features common industrial modes and supports a 50,000-item library with 1,000 user profiles for easy data management. Includes GMP/GLP with time/date for result traceability



## Application Modes



**Weighing:** Determine the weight of items in the selected unit of measure.



**Parts Counting:** Count samples of uniform weight. Advanced auto-optimization software recalculates the average piece of weight as the overall weight increases.



**Checkweighing/Counting:** Compare the weight/count of a sample against target limits. Connect with Discrete I/O and Light Tower Kit for external check lights.

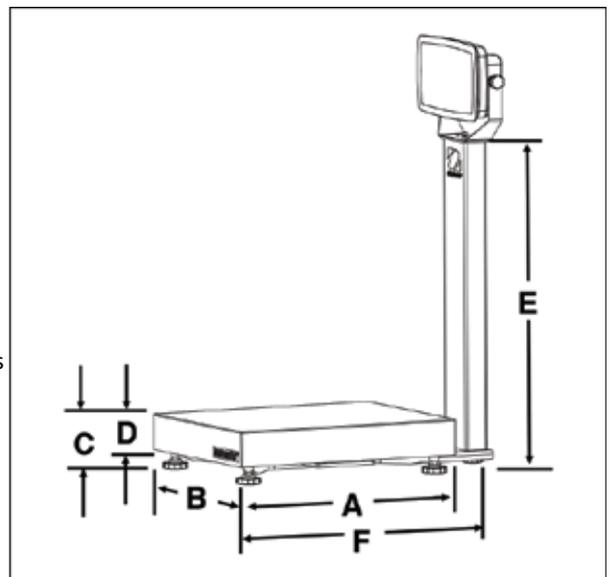


**Percent Weighing:** Measure the weight of a sample displayed as a percentage of a pre-established reference weight.



**Dynamic Weighing and Display Hold:** Weigh an unstable load. Scale takes an average of weights over a period of time. The Display Hold feature manually and automatically holds the last stable weight on the display.

## Dimensions



## Column Mount Bench Scale Specifications

Model	D52XW6W QDR6	D52XW15W QDR6	D52XW15W QDL7	D52XW30W QDL7	D52XW60W QDL7
Capacity × Readability	3/6 kg × 0.2/0.5 g	6/15 kg × 0.5/1 g		15/30 kg × 1/2 g	30/60 kg × 2/5 g
Column	350 mm stainless steel			680 mm stainless steel	
Base Dimensions (mm)	305 × 305			400 × 400	

Model	D52XW60WTDL7	D52XW150WTDL7	D52XW60WQDX7	D52XW150WQDX7	D52XW60WQDV8
Capacity × Readability	30/60 kg × 2/5 g	60/150 kg × 5/10 g	30/60 kg × 2/5 g	60/150 kg × 5/10 g	30/60 kg × 2/5 g
Column	680 mm stainless steel				980 mm stainless steel
Base Dimensions (mm)	400 × 500		500 × 500		610 × 610

Model	D52XW150WQDV8	D52XW300WQDV8	D52XW150WTDV8	D52XW300WTDV8	D52XW600WTDV8
Capacity × Readability	60/150 kg × 5/10 g	150/300 kg × 10/20 g	60/150 kg × 5/10 g	150/300 kg × 10/20 g	300/600 kg × 20/50 g
Column	980 mm stainless steel				
Base Dimensions (mm)	610 × 610		600 × 800		

## Accessories

OHAUS#	Description
30424405	Battery Kit, Li-ion, TD52
30424406	USB Host for Dongle, TD52
30424021	Light Tower, R-Y-G, IP65 (Requires 30097591)
30424022	In-use Cover Kit, TD52P
30424023	In-use Cover Kit, TD52XW
30469948	In-use Cover set (10), TD52P
30469949	In-use Cover set (10), TD52XW
30424025	Printer Holder Kit, D52
30424026	Wall Mount Kit, SST, TD52XW
30424027	Wall Mount Kit, CS, TD52P
30424409	LC Extension Cable, 9 meters, D52 <sup>1</sup>
30379716	M16 Gland with Ferrite, to TD52
30303533	Micro SD Card, 8G
30424403	Analog Output Kit, TD52 <sup>3</sup>
30424404	Second RS232/RS485/USB Kit, TD52 <sup>3</sup>
30097591	I/O with Relay (2 In/4 Out) <sup>3</sup>
30412537	WiFi/BT Dongle, OHAUS <sup>2</sup> (Requires 30424406)
30429666	Ethernet Kit, D52 <sup>2</sup>
30372146	Wheel Kit, Defender Series <sup>1</sup>
30045641	Printer SF40A

Note: 1. Cannot be used for legal-for-trade applications.

2. Only one of them can be used at the same time.

3. Only one of them can be used at the same time.

# Defender® 5000 WASH DOWN BENCH SCALES



Multifunctional Stainless Steel Washdown

Bench Scale for Standard Industrial Applications

- User-friendly model with an easy-to-use keypad, large backlit display and plain text on-screen prompts which guide you through operation.
- Durably constructed of a stainless steel platform, frame & IP68 indicator; IP67 stainless steel loadcell (NTEP/MC/OIML/EC Type single range) or aluminum load cell (OIML/EC Type dual range)
- Features common industrial modes and supports a 50,000-item library with 1,000 user profiles for easy data management. Includes GMP/GLP with time/date for result traceability



## Application Modes



**Weighing:** Determine the weight of items in the selected unit of measure.



**Parts Counting:** Count samples of uniform weight. Advanced auto-optimization software recalculates the average piece of weight as the overall weight increases.



**Checkweighing/Counting:** Compare the weight/count of a sample against target limits. Connect with Discrete I/O and Light Tower Kit for external check lights.

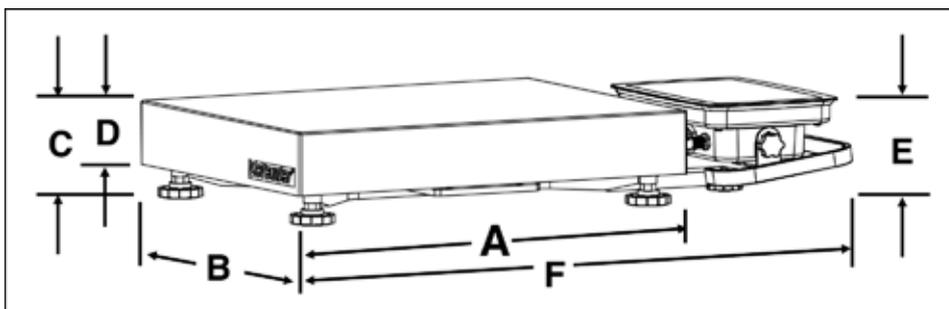


**Percent Weighing:** Measure the weight of a sample displayed as a percentage of a pre-established reference weight.



**Dynamic Weighing and Display Hold:** Weigh an unstable load. Scale takes an average of weights over a period of time. The Display Hold feature manually and automatically holds the last stable weight on the display.

## Dimensions



## Washdown Front Mount Bench Scale Specifications

Model	D52XW6WQDR5	D52XW15WQDR5	D52XW15WQDL5	D52XW30WQDL5	D52XW60WQDL5
Capacity × Readability	3/6 kg × 0.2/0.5 g	6/15 kg × 0.5/1 g		15/30 kg × 1/2 g	30/60 kg × 2/5 g
Base Dimensions (mm)	305 × 305			400 × 400	

Model	D52XW60WTDL5	D52XW150WTDL5	D52XW60WQDX5	D52XW150WQDX5
Capacity × Readability	30/60 kg × 2/5g	60/150 kg × 5/10 g	30/60 kg × 2/5g	60/150 kg × 5/10 g
Base Dimensions (mm)	400 × 500		500 × 500	

## Accessories

OHAUS#	Description
30424405	Battery Kit, Li-ion, TD52
30424406	USB Host for Dongle, TD52
30424021	Light Tower, R-Y-G, IP65 (Requires 30097591)
30424022	In-use Cover Kit, TD52P
30424023	In-use Cover Kit, TD52XW
30469948	In-use Cover set (10), TD52P
30469949	In-use Cover set (10), TD52XW
30424025	Printer Holder Kit, D52
30424026	Wall Mount Kit, SST, TD52XW
30424027	Wall Mount Kit, CS, TD52P
30424409	LC Extension Cable, 9 meters, D52 <sup>1</sup>
30379716	M16 Gland with Ferrite, to TD52
30303533	Micro SD Card, 8G
30424403	Analog Output Kit, TD52 <sup>3</sup>
30424404	Second RS232/RS485/USB Kit, TD52 <sup>3</sup>
30097591	I/O with Relay (2 In/4 Out) <sup>3</sup>
30412537	WiFi/BT Dongle, OHAUS <sup>2</sup> (Requires 30424406)
30429666	Ethernet Kit, D52 <sup>2</sup>
30372146	Wheel Kit, Defender Series <sup>1</sup>
30045641	Printer SF40A

Note: 1. Cannot be used for legal-for-trade applications.

2. Only one of them can be used at the same time.

3. Only one of them can be used at the same time

# Defender® 5000 STANDARD BENCH SCALES



Multifunctional Bench Scale for Standard Industrial Applications

- User-friendly model with an easy-to-use keypad, large backlit display and plain text on-screen prompts which guide you through operation
- Durable construction with a stainless steel platform, sand gray powder-coated steel frame & aluminum load cell. Defender meets NTEP/Measurement Canada or OIML/EC type approvals (depending on region)
- Features common industrial modes and supports a 50,000-item library with 1,000 user profiles for easy data management. Includes GMP/GLP with time/date for result traceability



## Application Modes



**Weighing:** Determine the weight of items in the selected unit of measure.



**Parts Counting:** Count samples of uniform weight. Advanced auto-optimization software recalculates the average piece of weight as the overall weight increases.



**Checkweighing/Counting:** Compare the weight/count of a sample against target limits. Connect with Discrete I/O and Light Tower Kit for external check lights.

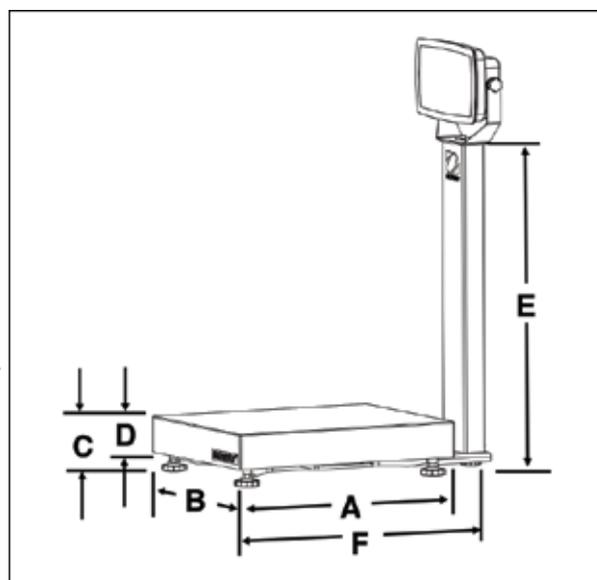


**Percent Weighing:** Measure the weight of a sample displayed as a percentage of a pre-established reference weight.



**Dynamic Weighing and Display Hold:** Weigh an unstable load. Scale takes an average of weights over a period of time. The Display Hold feature manually and automatically holds the last stable weight on the display.

## Dimensions



## Column Mount Bench Scale Specifications

Model	D52P6RQDR1	D52P15RQDR1	D52P15RTDR1	D52P30RTDR1	D52P60RTDR1	D52P15RQDL2	D52P30RQDL2
Capacity × Readability	3/6 kg × 0.2/0.5 g	6/15 kg × 0.5/1 g		15/30 kg × 1/2 g	30/60 kg × 2/5 g	6/15 kg × 0.5/1 g	15/30 kg × 1/2 g
Column	350 mm powder-coated steel					680 mm powder-coated steel	
Base Dimensions (mm)	305 × 305		305 × 355			400 × 400	

Model	D52P60RQDL2	D52P60RTDL2	D52P150RTDL2	D52P150RTDL2	D52P150RQDX2	D52P60RQDV3	D52P150RQDV3
Capacity × Readability	30/60 kg × 2/5 g		60/150 kg × 5/10 g	30/60 kg × 2/5 g	60/150 kg × 5/10 g	30/60 kg × 2/5 g	60/150 kg × 5/10 g
Column	680 mm powder-coated steel					980 mm powder-coated steel	
Base Dimensions (mm)	400 × 400	400 × 500		500 × 500		610 × 610	

Model	D52P300RQDV3	D52P150RTDV3	D52P300RTDV3	D52P600RTDV3
Capacity × Readability	150/300 kg × 10/20 g	60/150 kg × 5/10 g	150/300 kg × 10/20 g	300/600 kg × 20/50 g
Column	980 mm powder-coated steel			
Base Dimensions (mm)	610 × 610	600 × 800		

## Accessories

OHAUS#	Description
30424405	Battery Kit, Li-ion, TD52
30424406	USB Host for Dongle, TD52
30424021	Light Tower, R-Y-G, IP65 (Requires 30097591)
30424022	In-use Cover Kit, TD52P
30424023	In-use Cover Kit, TD52XW
30469948	In-use Cover set (10), TD52P
30469949	In-use Cover set (10), TD52XW
30424025	Printer Holder Kit, D52
30424026	Wall Mount Kit, SST, TD52XW
30424027	Wall Mount Kit, CS, TD52P
30424409	LC Extension Cable, 9 meters, D52 <sup>1</sup>
30379716	M16 Gland with Ferrite, to TD52
30303533	Micro SD Card, 8G
30424403	Analog Output Kit, TD52 <sup>3</sup>
30424404	Second RS232/RS485/USB Kit, TD52 <sup>3</sup>
30097591	I/O with Relay (2 In/4 Out) <sup>3</sup>
30412537	WiFi/BT Dongle, OHAUS <sup>2</sup> (Requires 30424406)
30429666	Ethernet Kit, D52 <sup>2</sup>
30372146	Wheel Kit, Defender Series <sup>1</sup>
30045641	Printer SF40A

Note: 1. Cannot be used for legal-for-trade applications.

2. Only one of them can be used at the same time.

3. Only one of them can be used at the same time

# Defender® 5000 STANDARD BENCH SCALES



Multifunctional Bench Scale for Standard Industrial Applications

- User-friendly model with an easy-to-use keypad, large backlit display and plain text on-screen prompts which guide you through operation
- Durable construction with a stainless steel platform, sand gray powder-coated steel frame & aluminum load cell. Defender meets NTEP/Measurement Canada or OIML/EC type approvals (depending on region)
- Features common industrial modes and supports a 50,000-item library with 1,000 user profiles for easy data management. Includes GMP/GLP with time/date for result traceability



## Application Modes



**Weighing:** Determine the weight of items in the selected unit of measure.



**Parts Counting:** Count samples of uniform weight. Advanced auto-optimization software recalculates the average piece of weight as the overall weight increases.



**Checkweighing/Counting:** Compare the weight/count of a sample against target limits. Connect with Discrete I/O and Light Tower Kit for external check lights.

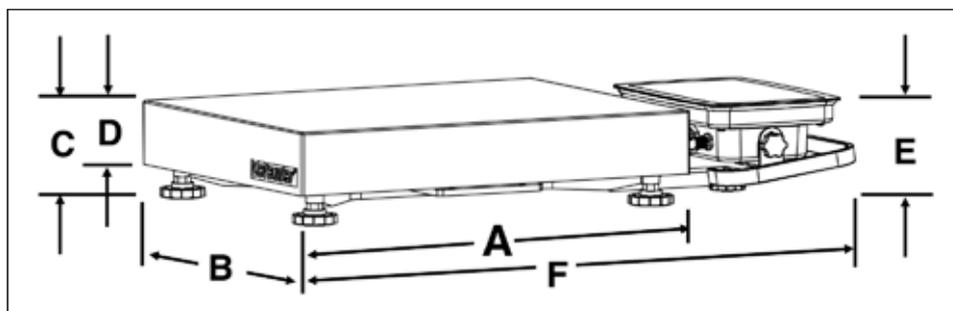


**Percent Weighing:** Measure the weight of a sample displayed as a percentage of a pre-established reference weight.



**Dynamic Weighing and Display Hold:** Weigh an unstable load. Scale takes an average of weights over a period of time. The Display Hold feature manually and automatically holds the last stable weight on the display.

## Dimensions



## Front Mount Bench Scale Specifications

Model	D52P6RQDR5	D52P15RQDR5	D52P15RTDR5	D52P30RTDR5	D52P60RTDR5	D52P15RQDL5
Capacity × Readability	3/6 kg × 0.2/0.5 g	6/15 kg × 0.5/1 g		15/30 kg × 1/2 g	30/60 kg × 2/5 g	
Base Dimensions (mm)	305 × 305			305 × 355		400 × 400

Model	D52P30RQDL5	D52P60RQDL5	D52P60RTDL5	D52P150RTDL5	D52P60RQDX5	D52P150RQDX5
Capacity × Readability	30/60 kg × 2/5 g	30/60 kg × 2/5 g		60/150 kg × 5/10 g	30/60 kg × 2/5 g	60/150 kg × 5/10 g
Base Dimensions (mm)	400 × 400			400 × 500		500 × 500

## Accessories

OHAUS#	Description
30424405	Battery Kit, Li-ion, TD52
30424406	USB Host for Dongle, TD52
30424021	Light Tower, R-Y-G, IP65 (Requires 30097591)
30424022	In-use Cover Kit, TD52P
30424023	In-use Cover Kit, TD52XW
30469948	In-use Cover set (10), TD52P
30469949	In-use Cover set (10), TD52XW
30424025	Printer Holder Kit, D52
30424026	Wall Mount Kit, SST, TD52XW
30424027	Wall Mount Kit, CS, TD52P
30424409	LC Extension Cable, 9 meters, D52 <sup>1</sup>
30379716	M16 Gland with Ferrite, to TD52
30303533	Micro SD Card, 8G
30424403	Analog Output Kit, TD52 <sup>3</sup>
30424404	Second RS232/RS485/USB Kit, TD52 <sup>3</sup>
30097591	I/O with Relay (2 In/4 Out) <sup>3</sup>
30412537	WiFi/BT Dongle, OHAUS <sup>2</sup> (Requires 30424406)
30429666	Ethernet Kit, D52 <sup>2</sup>
30372146	Wheel Kit, Defender Series <sup>1</sup>
30045641	Printer SF40A

Note: 1. Cannot be used for legal-for-trade applications.

2. Only one of them can be used at the same time.

3. Only one of them can be used at the same time

# Defender® 3000XW XTREME WASHDOWN SCALES



Versatile Bench Scales Meet Basic Industrial Requirements for Washdown Applications

- The NEMA 4X/IP66 stainless steel indicator is built to endure tough industrial elements. The 58-hour rechargeable battery offers continuous operation for multi-day operations
- Durable construction with a 304 stainless steel platform, stainless steel tubular frame, column and indicator bracket, and IP67 stainless steel load cell
- Easy-to-read display & basic counting mode allow for simple operation for everyday basic industrial applications. Offered with NTEP/Measurement Canada or OIML/EC Type approvals (depending on region)



OIML



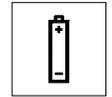
Parts Counting



RS232



NEMA 4X/  
IP65



Rechargeable Battery

Model	D32XW30VR	D32XW60VR	D32XW60VL	D32XW150VL	D32XW150VX	D32XW300VX
Capacity × Readability	30 × 0.005 kg	60 × 0.01 kg	60 × 0.01 kg	150 × 0.02 kg	150 × 0.02 kg	300 × 0.05 kg
Column	350 mm stainless steel			700 mm stainless steel		
Scale Base Size (mm)	305 × 355 × 123		420 × 550 × 136		500 × 650 × 147	



# Defender® 3000 BENCH SCALES

Versatile Bench Scales Meet Basic Industrial Requirements for Dry Applications

- Durable ABS plastic terminal houses a 100-hour rechargeable battery which allows for continuous operation for five straight days
- This tough industrial scale features a 304 stainless steel platform, painted steel tubular frame, column and indicator bracket, and aluminum load cell
- Easy-to-read display & basic counting mode allow for simple operation for everyday basic industrial applications. Offered with NTEP/Measurement Canada or OIML/EC Type approvals (depending on region)



OIML



Parts Counting



RS232



Rechargeable Battery



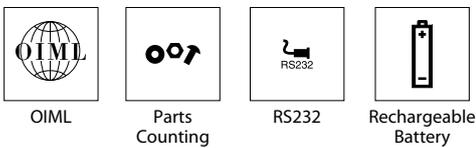
Model	D31P30BR	D31P60BR	D31P60BL	D31P150BL	D31P150BX	D31P300BX
Capacity × Readability	30 × 0.005 kg	60 × 0.01 kg	60 × 0.01 kg	150 × 0.02 kg	150 × 0.02 kg	300 × 0.05 kg
Column	350 mm stainless steel			700 mm stainless steel		
Scale Base Size (mm)	305 × 355 × 123		420 × 550 × 136		500 × 650 × 147	



# Defender® 3000- D32PE BENCH SCALES

Versatile Bench Scales Meet Basic Industrial Requirements for Dry Applications

- White LED indicator displays results clearly, even in low light settings
- This tough industrial scale features a 304 stainless steel platform, painted tubular frame, aluminum IP65 load cell and stainless steel column
- Internal transformer and 80-hour rechargeable battery ensure continuous operation for multi-day applications



Model	D32PE30B2R1	D32PE60B2R1	D32PE60B2L2	D32PE150B2L2	D32PE150B2X2	D32PE300B2X2	D32PE300B2V3	D32PE600B2V3
Capacity × Readability (d)	30 kg × 0.005 kg	60 kg × 0.01 kg	60 kg × 0.01 kg	150 kg × 0.02 kg	150 kg × 0.02 kg	300 kg × 0.05 kg	300 kg × 0.05 kg	600 kg × 0.1 kg
Platform (W × D) (mm)	305 × 355		420 × 550		500 × 650		600 × 800	
Front View Dimensions (mm) (F1 × F2 × F3 × F4 × F5 × F6)	210 × 166 × 305 × 123 × 75 × 256		210 × 166 × 420 × 136 × 80 × 371		210 × 166 × 500 × 143 × 90 × 440		210 × 166 × 500 × 170 × 100 × 503	
Side View Dimensions (mm) (S1 × S2 × S3 × S4 × S5)	740 × 467 × 355 × 306 × 52		940 × 622 × 550 × 500 × 52		940 × 762 × 650 × 590 × 52		1240 × 912 × 800 × 724 × 52	

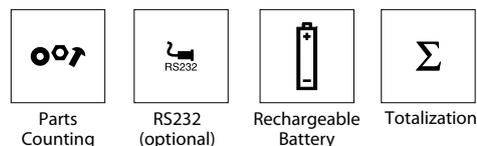
D32PE & D24P Bench Scales

# Defender® 2000- D24P BENCH SCALES



Designed for Dependability and Durability at a Practical Price!

- The polished 430 stainless steel platform with painted carbon steel frame and aluminum alloy IP65 load cell provide strength and durability
- Defender 2000's red LED indicator clearly displays results that can be seen in locations with less than optimal lighting
- An AC adapter and internal rechargeable lead acid battery provide options for powering your Defender 2000



Model	D24PE30FR	D24PE60FR	D24PE60FL	D24PE150FL	D24PE150FX	D24PE300FX	D24PE300FV	D24PE600FV
Certified Capacity × Readability	30 × 0.005 kg	60 × 0.01 kg	60 × 0.01 kg	150 × 0.02 kg	150 × 0.02 kg	300 × 0.05 kg	300 × 0.05 kg	600 × 0.1 kg
Column (mm)	500			700			1000	
Platform Dimensions (W × D) (mm)	300 × 350		400 × 500		500 × 600		600 × 800	

# Ranger® 7000 COMPACT SCALES



Top-of-the-Line Compact Scales for Even the Most Complex Industrial Applications

- Simplify complex applications and minimize the need for manual calculations with 10 advanced application modes, peripheral device control and an optional kit for a second scale platform
- The most precise scale in its class with one-second stabilization time, up to 75,000d or 350,000d display resolution and legal-for-trade certifications
- Extremely durable scale designed to thrive in rugged industrial environments. Features IP54-rated metal housing and sealed metal terminal

Check-weighing	Rechargeable Battery	Parts Counting	Dynamic/Animal Weighing	Totalization	Percent Weighing	Display Hold	RS232	RS232/USB/Ethernet Optional	Filling	Formulation	Density Determination

Model	R71MD3	R71MD6	R71MD15	R71MD35	R71MD60	R71MHD3	R71MHD6	R71MHD15	R71MHD35
Capacity × Readability (g)	3,000 × 0.05	6,000 × 0.1	15,000 × 0.2	35,000 × 0.5	60,000 × 1	3,000 × 0.01	6,000 × 0.02	15,000 × 0.1	35,000 × 0.1
Certified Capacity × Readability	3,000 × 0.5	6,000 × 1	15,000 × 2	35,000 × 5	60,000 × 10	3,000 × 0.1	6,000 × 0.2	15,000 × 1	35,000 × 1
Stabilization Time (s)	≤1								
Platform Size (mm)	280 × 280 × 31		377 × 311 × 48			240 × 240 × 15		377 × 311 × 48	



# Ranger® 4000 COMPACT SCALES

Durable Compact Scales for the Toughest Industrial Weighing Environments

- Sturdy metal housing and slip-resistant rubber feet provide the protection, stability and long product life needed for tough industrial weighing
- The most user-friendly scale on the market features Smart Text™ for easy operation and setup to ensure efficiency in the workplace
- With the largest display in its class, checkweighing LED indicators and backlit LCD display, the Ranger 4000 can function in almost any industrial environment



Check-weighing	Rechargeable Battery	Parts Counting	Dynamic/Animal Weighing	Totalization	Percent Weighing	Display Hold	RS232	RS232/USB/Ethernet Optional

Models	R41ME3	R41ME6	R41ME15	R41ME30
Capacity (max) × Readability (d)	3 × 0.0001 kg 3,000 × 0.1 g	6 × 0.0002 kg 6,000 × 0.2 g	15 × 0.0005 kg 15,000 × 0.5 g	30 × 0.001 kg 30,000 × 1 g
Certified Capacity × Readability	3 × 0.001 kg 3000 × 1 g	6 × 0.002 kg 6000 × 2 g	15 × 0.005 kg 15000 × 5 g	30 × 0.01 kg 30000 × 10 g
Stabilization Time (s)	≤1			
Platform Size (W × L) (mm)	300 × 225			



## Ranger® 3000 COMPACT SCALES

Multi-Purpose Compact Bench Scales for Industrial Weighing Applications

- With the largest display in its class, checkweighing LED indicators and backlit LCD display, the Ranger 3000 can function in any industrial environment
- User-friendly scale with easy setup to ensure efficiency in the workplace
- Eliminate waiting time and increase control of your operation with accurate one-second results



Checkweighing	Rechargeable Battery	Parts Counting	Dynamic/Animal Weighing	Totalization	Percent Weighing	Display Hold	RS232	RS232/USB/Ethernet Optional	OIML	NSF Listed

Model	R31P1502	R31P3	R31P6	R31P15	R31P30
Default Capacity × Readability	1.5 kg × 0.00005 kg 1500 g × 0.05 g	3 kg × 0.0001 kg 3000 g × 0.1 g	6 kg × 0.0002 kg 6000 g × 0.2 g	15 kg × 0.0005 kg 15000 g × 0.5 g	30 kg × 0.001 kg 30000 g × 1 g
Certified Model	R31P1502-M	R31P3-M	R31P6-M	R31P15-M	R31P30-M
Certified Capacity × Readability	1.5 kg × 0.0005 kg 1500 g × 0.5 g	3 kg × 0.001 kg 3000 g × 1 g	6 kg × 0.002 kg 6000 g × 2 g	15 kg × 0.005 kg 15000 g × 5 g	30 kg × 0.01 kg 30000 g × 10 g
Stabilization Time (s)	≤1				
Pan Size (W × L) (mm)	300 x 225				

\*Note: Only available in selected region.

## Ranger® 2000 COMPACT SCALES



Effective Compact Bench Scales for Industrial Weighing Applications

- With checkweighing LED indicators and the largest in its class red LED display, the Ranger 2000 is operational even in dim lighting conditions
- User-friendly scale with easy setup to ensure efficiency in the workplace
- Eliminate waiting time and increase control of your operation with accurate one-second results



Checkweighing	Rechargeable Battery	Parts Counting	Dynamic/Animal Weighing	Totalization	Percent Weighing	Display Hold	RS232	RS232/USB/Ethernet Optional

Model	R21PE1502	R21PE3	R21PE6	R21PE15	R21PE30
Capacity	1.5kg	3kg	6kg	15kg	30kg
Readability	0.05g	0.1g	0.2g	0.5g	1g
Stabilization Time (s)	≤1				
Platform Size (mm)	225 x 300				

\*Note: Only available in selected region.

# Ranger® 1000 COMPACT SCALES

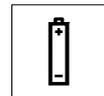


Affordable Compact Bench Scales for Basic Industrial Weighing Applications

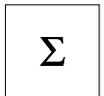
- High-performance scale with 15,000 display resolution for dependable results
- Durable bench scale is designed for heavy-duty use with ABS plastic housing and stainless steel platform
- Flexible power option allows the scale to run on an AC adapter or internal rechargeable lead acid battery for portable operation



Check-weighing



Rechargeable Battery



Totalization

Models	R11P3	R11 P6	R11P15	R11P30
Capacity × Readability	3000 g × 0.2 g 3 kg × 0,0002 kg	6000 g × 0.5 g 6 kg × 0,0005 kg	15000 g × 1 g 15 kg × 0,001 kg	30000 g × 2 g 30 kg × 0,002 kg
Stabilization Time (s)	≤2			
Pan Size (W × L) (mm)	294 × 226			

\*Note: Only available in selected region.



# Valor® 7000 COMPACT SCALES

Improve Productivity & Handle Demanding Applications With This Adaptable Multi-Functional Scale

- Food-safe Valor 7000 is NSF-certified, USDA-AMS accepted, and supports HACCP-certified systems -- suitable for food applications in dry areas
- Large displays with backlight allow for easy viewing of results. Easy access communication ports for fast and useful data transfer and storage
- Valor 7000 produces repeatable and accurate results within less than one second to virtually eliminate your wait time and improve productivity



OIML



NSF Listed



USDA-AMS Accepted



Percent Weighing



Check-weighing



Rechargeable Battery



RS232

Model	V71P1502T	V71P3T	V71P6T	V71P15T	V71P30T
Capacity × Readability	1.5 kg × 0.00005 kg 1500 g × 0.05 g	3 kg × 0.0001 kg 3000 g × 0.1 g	6 kg × 0.0002 kg 6000 g × 0.2 g	15 kg × 0.0005 kg 15000 g × 0.5 g	30 kg × 0.001 kg 30000 g × 1 g
Certified Capacity × Readability	1.5 kg × 0.0005 kg 1500 g × 0.5 g	3 kg × 0.001 kg 3000 g × 1 g	6 kg × 0.002 kg 6000 g × 2 g	15 kg × 0.005 kg 15000 g × 5 g	30 kg × 0.01 kg 30000 g × 10 g
Stabilization Time (s)	≤1				
Platform Size (mm)	225 × 300				



## Valor® 4000 COMPACT SCALES

High-Performance, Legal-for-Trade Food Scale Perfect for Harsh, Wet Workplace Conditions

- Food-safe Valor 4000 is NSF-certified, USDA-AMS accepted, and supports HACCP-certified systems, making it suitable for demanding food processing applications
- Increase productivity with its touchless Tare sensor, half-second stabilization time, checkweighing mode and LEDs, and percent weighing mode
- Unique knife-resistant keypad and IPX8 protection ensures durability and safe operation in wet conditions



Plastic Housing



Stainless Steel Housing



OIML



NSF  
Listed



Totalization



Percent  
Weighing



Check-  
weighing



Rechargeable  
Battery

Model	V41PWE1501T	V41PWE3T	V41PWE6T	V41PWE15T
	V41XWE1501T	V41XWE3T	V41XWE6T	V41XWE15T
Capacity × Readability	1.5 × 0.0002 kg 1500 × 0.2 g	3 × 0.0005 kg 3000 × 0.5 g	6 × 0.001 kg 6000 × 1 g	15 × 0.002 kg 15000 × 2 g
Model	V41PWE1501T-M	V41PWE3T-M	V41PWE6T-M	V41PWE15T-M
	V41XWE1501T-M	V41XWE3T-M	V41XWE6T-M	V41XWE15T-M
Certified Capacity × Readability	1.5 kg × 0.0005 kg 1500 g × 0.5 g	3 kg × 0.001 kg 3000 g × 1 g	6 kg × 0.002 kg 6000 g × 2 g	15 kg × 0.005 kg 15000 g × 5 g
Stabilization Time (s)	≤0.5			
Platform Size (mm)	190 x 242			

\*Note: Only available in selected region.

# FD Series COMPACT BENCH SCALES



Speed, Durability and Cleanliness Designed for Food Service Use

- The fully stainless steel FD is NSF Certified and supports HACCP-Certified systems helping to ensure the integrity and safety of the weighing of all food products
- With software for general weighing, percent weighing and checkweighing, the FD can be used for a variety of food weighing needs
- The 120-hour internal rechargeable battery will help ensure that your scale is up and running when you need it, even during long shifts



OIML



NSF Listed



USDA-AMS Accepted



Percent Weighing



Checkweighing



Rechargeable Battery

Model	FD3H	FD6H	FD15H
Capacity × Readability	3 × 0.0001 kg 3,000 × 0.1 g	6 × 0.0002 kg 6,000 × 0.2 g	15 × 0.001 kg 15,000 × 1 g
Stabilization Time (s)	< 2		
Platform Size (mm)	209 × 209		

## Legal for Trade Models

Model		FD3	FD6	FD15
Capacity × Readability	Default	3 × 0.0005 kg 3,000 × 0.5 g	6 × 0.001 kg 6,000 × 1 g	15 × 0.002 kg 15,000 × 2 g
	Certified / Approved	3,000 × 1 g	6,000 × 2 g	15,000 × 5 g
Stabilization Time (s)		< 2		
Platform Size (mm)		209 × 209		



Optional Carrying Case, (Model 80251394)



# Valor® 3000 COMPACT SCALES

Rugged, Full Stainless Steel Design in a High Performance, Portable Scale

- The stainless steel Valor 3000 Xtreme is NSF Certified and supports HACCP-Certified systems helping to ensure the integrity and safety of all food products weighed on the scale
- The compact Valor 3000 Xtreme requires minimal counter space and offers resolutions up to 40,000d and 0.01g, providing precise measurements in demanding environments
- With software for general weighing, percent weighing and specific gravity, the Valor 3000 can be used for a variety of food weighing and measurement needs



OIML



NSF Listed



USDA-AMS Accepted



Percent Weighing



Specific Gravity Mode



Battery Power



NEMA 4X/IP65 XW Models only

Model	V31XW301	V31X3	V31XW3	V31X6	V31XW6
Capacity × Readability	300 × 0.1 g	3,000 × 1 g	3,000 × 0.5 g	6,000 × 1 g	6,000 × 1 g
Stabilization Time (s)	≤3				
Platform Size (mm)	146 × 158				

## High Resolution Models!

Model	V31XH202	V31XH402	V31X501	V31XH2	V31XH4
Capacity × Readability	200 × 0.01 g	400 × 0.01 g	500 × 0.1 g	2,000 × 0.1 g	4,000 × 0.1 g
Stabilization Time (s)	≤3				
Platform Size (mm)	146 × 158	120 dia	120 dia	146 × 158	

## Valor 3000 Carrying Case and Stainless Steel Accessory Trays

Model	Description	Dimensions
80251147	Sandwich Pan	28 × 15 mm
80251148	French Fries / Taco Holder	16 × 9 mm
80251149	Ice Cream Cone Holder	16 × 12 mm
80251216	Carrying Case	42 × 32 × 14 mm

Accessory trays installed on Valor 3000—scale not included.  
Trays only recommended for Valor 3000 scales with capacities 2 lb or over.

# Valor® 2000 COMPACT SCALES



High-Performance Food Scale Suitable for Harsh, Wet Workplace Conditions

- The sturdy polycarbonate keypad offers protection from knives and other sharp instruments used in food preparation, processing and portioning applications.
- A unique IPX8 flow-thru design ensures that the NSF-certified Valor 2000 will drain moisture in the scale when used in wet conditions.
- Stabilization time is less than a half-second. Large front and rear LED displays allow for easy viewing so two operators can share one scale.



NSF Listed



USDA-AMS Accepted



NEMA 4/IPX8 Washdown



Rechargeable Battery

Model	V22PWE1501	V22PWE3	V22PWE6	V22PWE15	V22PWE30
	V22PWE1501T	V22PWE3T	V22PWE6T	V22PWE15T	V22PWE30T
	V22XWE1501T	V22XWE3T	V22XWE6T	V22XWE15T	V22XWE30T
Capacity × Readability	1.5 × 0.0002 kg 1500 × 0.2 g	3 × 0.0005 kg 3000 × 0.5 g	6 × 0.001 kg 6000 × 1 g	15 × 0.002 kg 15000 × 2 g	30 × 0.005 kg 30000 g × 5 g
Stabilization Time (s)	≤ 0.5				
Platform Size (mm)	190 × 242				

Note: 1. Models without "T" (e.g. V22PWE3) are single display versions. These are only available in certain countries.  
2. Unit: g, kg, lb, oz, lb:oz can be switched in service menu by authorized service engineer.

## Accessories

OHAUS#	Description
30251753	Stainless Steel Platform, 300 x 225 mm



# Valor® 1000 COMPACT SCALES

## Reliable Food-Safe Scale for Dry Environments

- NSF-listed design supports HACCP systems with durable ABS housing and removable stainless steel pan, making Valor 1000 suitable for food preparation and portioning applications.
- Save money on batteries. Energy-efficient design operates for up to one year or up to 1,500 hours.
- Intuitive two-button operation allows for quick weight checking to simplify repetitive operations and increase operator efficiency.



Valor® 1000 COMPACT SCALES



Rechargeable Battery

Model*	V12P3	V12P6	V12P15	V12P30
Capacity × Readability (Max × d non-approved)	3 kg × 0.0005 kg 3,000 g × 0.5 g	6 kg × 0.001 kg 6,000 g × 1 g	15 kg × 0.002 kg 15,000 g × 2 g	30 kg × 0.005 kg 30,000 g × 5 g
Stabilization Time (s)	≤ 2 seconds			
Pan Size (mm)	245 × 190			

\* Certain regions are available with V12PRx models, which are standard with AC adapter and rechargeable battery.

# Counting Scales



## Counting Scales

Ranger® Count 4000

Ranger® Count 3000

Ranger® Count 2000

Ranger® Count 1000

# Ranger® Count 4000 Series



Top-of-the-Line Counting Scales for Even the Toughest Industrial Weighing Conditions

- Sturdy metal housing and slip-resistant rubber feet provide the protection, stability and long product life needed for tough industrial weighing
- Accurate weighing and counting performance is assured with 1:1,500,000 internal counting resolution and auto-optimization software that reduces errors
- Easy-to-operate with SmarText™ software, a centrally located count display and dedicated Sample and Tare keys



Check-weighing



Rechargeable Battery



Parts Counting



Totalization



RS232



RS232/USB/Ethernet Optional

Models	RC41M3	RC41M6	RC41M15	RC41M30
Capacity × Readability	3 × 0.0001 kg 3,000 × 0.1 g	6 × 0.0002 kg 6,000 × 0.2 g	15 × 0.0005 kg 15,000 × 0.5 g	30 × 0.001 kg 30,000 × 1 g
Certified Capacity × Readability	3 × 0.001 kg 3,000 × 1 g	6 × 0.002 kg 6,000 × 2 g	15 × 0.005 kg 15,000 × 5 g	30 × 0.01 kg 30,000 × 10 g
Stabilization Time (s)	≤ 1			
Platform Size (W × L) (mm)	300 × 225			



# Ranger® Count 3000 Series

Reliable Counting Scales to Ensure Accurate Results

- Accurate weighing and counting are assured with a high-resolution display, 30-item library function, and auto-optimization software that reduces errors
- Easy to use in multi-step counting operations. Features three backlit LCD displays, including a centrally located count display, and an easy-to-navigate menu
- Eliminate waiting time and increase control of your operation with accurate one-second results



Check-weighing



Parts Counting



Totalization



RS232



Rechargeable Battery



RS232/USB/Ethernet Optional



NTEP Certified (Optional)

Model	RC31P1502	RC31P3	RC31P6	RC31P15	RC31P30
Capacity × Readability	1.5 kg × 0.00005 kg 1500 g × 0.05 g	3 kg × 0.0001 kg 3000 g × 0.1 g	6 kg × 0.0002 kg 6000 g × 0.2 g	15 kg × 0.0005 kg 15000 g × 0.5 g	30 kg × 0.001 kg 30000 g × 1 g
Certified Capacity × Readability	1.5 kg × 0.0005 kg 1500 g × 0.5 g	3 kg × 0.001 kg 3000 g × 1 g	6 kg × 0.002 kg 6000 g × 2 g	15 kg × 0.005 kg 15000 g × 5 g	30 kg × 0.01 kg 30000 g × 10 g
Stabilization Time (s)	≤ 1				
Pan Size (W × L) (mm)	300 × 225				

\*Note: Only available in selected region.



# Ranger® Count 2000 Series

## Effective Counting Scales to Ensure Accurate Results

- Accurate weighing and counting is assured with high-resolution, 30-item library function, and auto-optimization software that reduces errors
- Easy to use in multi-step counting operations. Features three backlit LCD displays, including a centrally located count display, and an easy-to-navigate menu
- Eliminate waiting time and increase control of your operation with accurate one-second results



Check-weighing	Parts Counting	Totalization	RS232	Rechargeable Battery	RS232/USB/Ethernet Optional

Model	RC21P1502	RC21P3	RC21P6	RC21P15	RC21P30
Capacity × Readability	1.5 kg × 0.00005 kg 1500 g × 0.05 g	3 kg × 0.0001 kg 3000 g × 0.1 g	6 kg × 0.0002 kg 6000 g × 0.2 g	15 kg × 0.0005 kg 15000 g × 0.5 g	30 kg × 0.001 kg 30000 g × 1 g
Stabilization Time (s)	≤ 1				
Platform Size (mm)	225 × 300				

\*Note: Only available in selected region.

# Ranger® Count 1000 Series



## Affordable Counting Scales for Basic Industrial Counting Operations



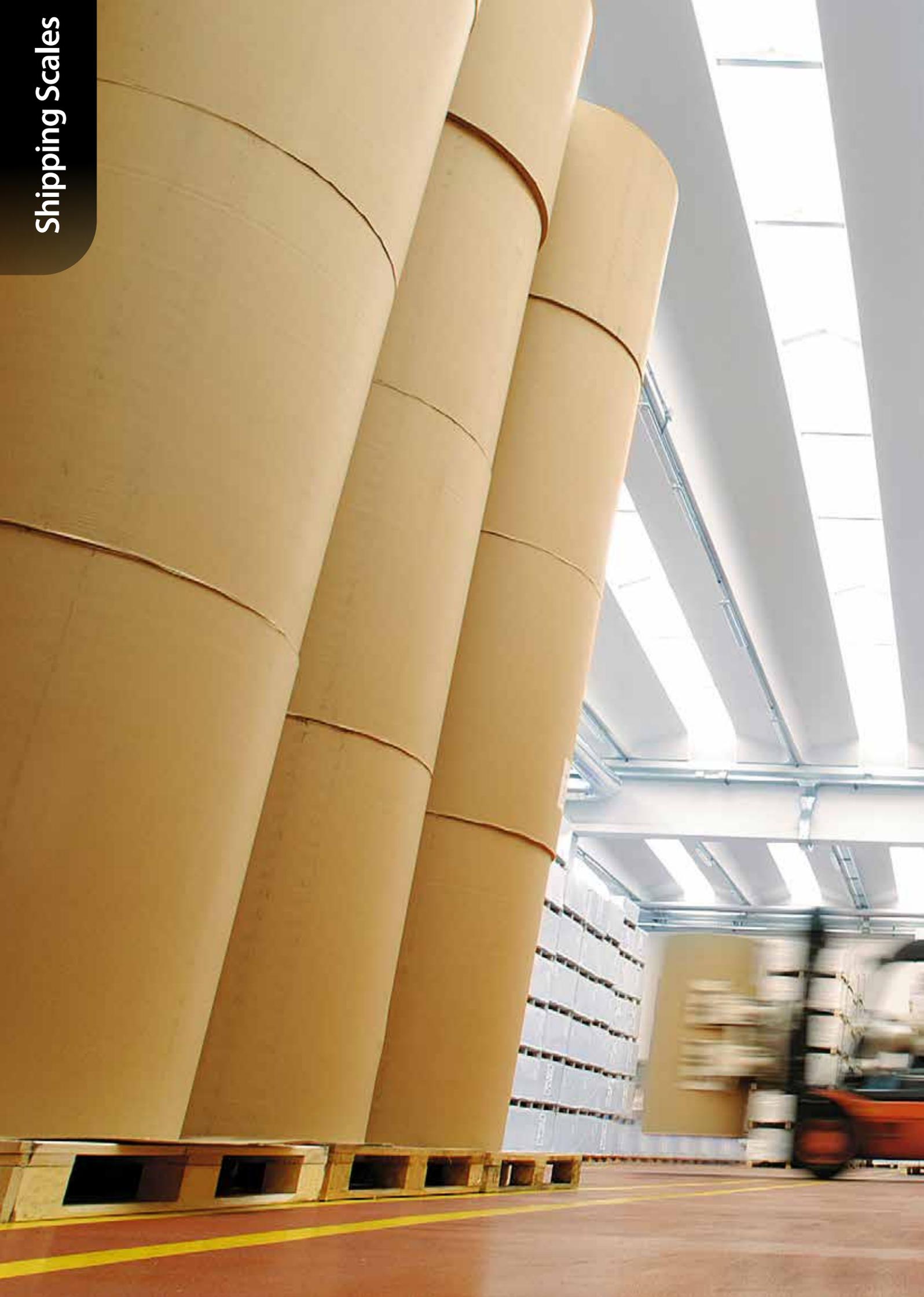
- Dedicated counting keypad, with numeric, Tare and Sample keys, makes counting operations simple and straightforward
- APW memory stores up to 10 commonly used part weights, to speed up counting operations and minimize redundant work
- Ensure counting accuracy with auto-optimization software that recalculates the Average Piece Weight with each batch of parts

Check-weighing	Parts Counting	Totalization	Rechargeable Battery

Models	RC11P3	RC11P6	RC11P15	RC11P30
Capacity × Readability	3000 g × 0.2 g 3 kg × 0,0002 kg	6000 g × 0.5 g 6 kg × 0,0005 kg	15000 g × 1 g 15 kg × 0,001 kg	30000 g × 2 g 30 kg × 0,002 kg
Stabilization Time (s)	≤ 2			
Pan Size (W × L) (mm)	294 × 226			

\*Note: Only available in selected region.

# Shipping Scales





# Shipping Scales

Catapult® 5000

ES Series

SD Series

Catapult® 1000

# Catapult® 5000 Series



The Heavy-Duty Shipping Scale that Combines Utility and Economy

- The Heavy-Duty Platform Accommodates both Large and Small Packages of Varying Shapes
- The Bright LED Display Enables the Scale to be Used in Any Lighting Condition
- Versatile Data Transfer and Power Options Enhance Operation



Dynamic/  
Animal Weighing



Display  
Hold



Totalization

Model	C51XE 6R	C51XE 30R	C51XE 50R	C51XE 200R	C51XE 30L	C51XE 50L	C51XE 100L	C51XE 200L	C51XE 30X	C51XE 50X	C51XE 100X	C51XE 200X
Capacity × Readability (d) kg	6 × 0.002	30 × 0.01	50 × 0.02	200 × 0.1	30 × 0.01	50 × 0.02	100 × 0.05	200 × 0.1	30 × 0.01	50 × 0.02	100 × 0.05	200 × 0.1
Stabilization Time (s)	≤ 2											
Battery Life	72 hours of continuous use with a 12-hour recharge time											
Base Size (W × L × H) (mm)	310 × 270 × 40				520 × 400 × 75				900 × 600 × 80			



# ES Series

Multipurpose Low Profile Shipping Scale

- With different size low-profile platforms, there are ES scales that can accommodate weighing loads of different shapes and sizes
- The three-way mounting bracket allows you to mount the indicator to the scale base, above the scale platform or on any vertical surface for maximum flexibility
- The sturdy and durable ES has a stainless steel platform and painted steel frame



Battery  
Power

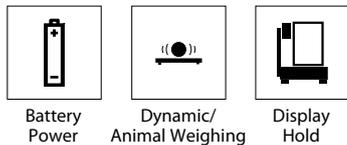
Model	ES6R	ES30R	ES50R	ES50L	ES100L	ES200L
Capacity × Readability	6 × 0.002 kg	30 × 0.01 kg	50 × 0.02 kg	50 × 0.02 kg	100 × 0.05 kg	200 × 0.1 kg
Stabilization Time (s)	≤ 3					
Battery Life	Up to 120 hours / 30 hours of continuous use					
Base Size (mm)	310 × 270 × 40			520 × 400 × 75		



## SD Series

### Rugged Economical Shipping Scales

- The SD is available in three capacities of 35kg, 75kg and 200kg and two platform sizes to meet the weighing needs of jobs of different physical sizes and capacities
- SD's painted steel platform and frame provides sturdy support for all materials placed on the platform
- SD not only provides accurate general weight determination but also has the software to support dynamic/animal weighing



Model	SD35	SD75	SD200	SD75L	SD200L
Capacity × Readability	35 × 0.02 kg	75 × 0.05 kg	200 × 0.1 kg	75 × 0.05 kg	200 × 0.1 kg
Stabilization Time (s)	≤ 3				
Battery Life	360 Hours				
Base Size (mm)	316 × 280 × 45			520 × 400 × 75	

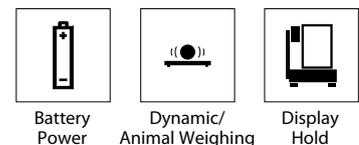
## Catapult® 1000 Series



### Economical Compact Shipping Scales



- The sturdy ABS plastic housing and platform with optional stainless steel platform make Catapult® 1000 sturdy yet easy to maneuver and fit into your workspace
- Bring the Catapult 1000 right to your work with the integrated carrying handle and its battery powered operation
- Catapult 1000 not only provides accurate general weight determination but also has the software to support dynamic/animal weighing



Model	C11P9	C11P20	C11P75
Capacity × Readability	9 × 0.005 kg	20 × 0.01 kg	75 × 0.05 kg
Stabilization Time (s)	≤ 2		
Battery Life	300 hours with alkaline cells, auto off after 4 minutes of inactivity		
Pan Size (mm)	316 × 280		





## Indicators

T72XW

TD52XW & TD52P

T32XW & TD32PE & T31P

T32M & T24P

# T72XW INDICATORS



## Advanced Performance Stainless Steel Indicator with External Device Control Capabilities

- With a 50,000 displayed resolution and the ability to support up to 10 load cells, T72XW was designed for heavy-duty industrial applications such as vehicle weighing
- Two option slots are available to enable a wide range of connectivity interfaces. Control external devices using the discrete I/O interface and transfer data through the serial, USB or Ethernet ports
- T72XW is very easy to set up and navigate - featuring a vivid graphic display with on-screen prompts and an alphanumeric keypad with designated keys for common functions such as Tare & ID information

								
OIML	RS232	Parts Counting	Dynamic/Animal Weighing	Check-weighing	GMP/GLP	NEMA 4X IP66	RS232 x2 (Optional)	RS422/RS485 (Optional)

Model	T72XW
Capacity Range	1 to 998000 (t, kg, g or lb)
Max. Displayed Resolution	1:50,000
Maximum Counting Resolution	1:6,000
Interface	RS232 (included), SD card (included), Ethernet (optional), USB with Discrete I/O (optional), Second RS232/RS485 (optional)
Keypad	8 function, 4 navigation, 12 alpha numeric membrane switches

T72 Indicator Options	
30132163	Ethernet Kit
30132164	USB with I/O kit, T72XW
30132165	COM2 Kit, T72XW



TD52XW



TD52P

# DEFENDER® 5000 INDICATORS

## Multifunctional Indicator for Standard Industrial Applications

- See results clearly on the large backlit display. The alphanumeric keypad & function keys allow for a simplified user experience. On-screen prompts and soft keys will guide you through the operation
- Results can be stored in the Micro SD card. Data output via built-in RS232 or optional interfaces including RS232/RS485/USB device, Ethernet & Bluetooth/WiFi. Analog Output & Discrete I/O with relays
- Features common industrial modes & supports a 50,000 item library & 1,000 user profiles which can be downloaded/uploaded for easy set-up (with SD Card). GMP/GLP with time/date for result traceability



TD52XW Indicator



TD52P Indicator



Parts Counting



Percent Weighing



Dynamic/Animal Weighing



Check-weighing



IP68 (Only for TD52XW)

Model	TD52P	TD52XW
Construction	ABS plastic, powder-coated steel bracket	304 stainless steel with sand blasted surface treatment, stainless steel bracket
A/D Conversion Rate	80 Hz	
Capacity Selections	999,999 with decimal located to five places	
Maximum Display Resolution	1:75,000	
Maximum Approved Resolution	1:10,000 (EC, OIML & NTEP/Measurement Canada) Class III or 2 × 3000e @ 0.8 μV/e (EC, OIML)	
Zeroing Range	2% or 100% of capacity	
Calibration	Zero, Span or 3-point Linear	
Span Calibration	1 kg or 1 lb to capacity	
Internal Resolution	1,137,000 counts per mV/V	

## Accessories

OHAUS#	Description
30412537	WiFi/BT Dongle, OHAUS <sup>2</sup> (Requires 30424406)
30424403	Analog Output Kit, TD52 <sup>3</sup>
30424404	Second RS232/RS485/USB Kit, TD52 <sup>3</sup>
30424405	Battery Kit, Li-ion, TD52
30424406	USB Host for Dongle, TD52
30424021	Light Tower, R-Y-G, IP65 (Requires 30097591)
30424022	In-use Cover Kit, TD52P
30424023	In-use Cover Kit, TD52XW
30424026	Wall Mount Kit, SST, TD52XW
30424027	Wall Mount Kit, CS, TD52P
30424409	LC Extension Cable, 9 meters, D52 <sup>1</sup>
30379716	M16 Gland with Ferrite, to TD52
30303533	Micro SD Card, 8G
30097591	I/O with Relay (2 In/4 Out) <sup>3</sup>
30429666	Ethernet Kit, D52 <sup>2</sup>
30045641	Printer SF40A

Note: 1. Cannot be used for legal-for-trade applications.  
 2. Only one of them can be used at the same time.  
 3. Only one of them can be used at the same time

## T32XW INDICATORS



Economical Stainless Steel Washdown Indicator for Basic Industrial Applications

- The NEMA 4X/IP65 stainless steel construction protects the indicator from water damage and a hinged front cover opens up easily, offering instant access for servicing
- The long-lasting internal rechargeable battery provides continuous operation for up to 58 hours, ensuring uninterrupted operation for more than two straight days
- Simple operation enhanced by an easy-to-read display and even basic counting mode round out this industrial indicator, making it ideal for everyday basic industrial use



## TD32PE INDICATORS

Economical ABS Plastic Indicator for Basic Industrial Applications

- Defender 3000 indicator's white LED indicator clearly displays results that can be seen in locations with less than optimal lighting
- Internal transformer and rechargeable lead acid battery provide options for powering your Defender 3000 indicator
- In addition to standard weighing mode, this indicator also features parts counting and accumulation functions



## T31P INDICATORS



Economical ABS Plastic Indicator for Basic Industrial Applications

- T31P is OIML approved, NTEP certified and Measurement Canada approved for use in all legal-for-trade applications
- The ultra-long-lasting internal rechargeable battery provides operation on a single charge for up to 100 hours
- The reversible rear cover offers the flexibility for connected cables to exit above or below the indicator housing



OIML (T32XW and T31P models)



Parts Counting



RS232



Rechargeable Battery



NEMA 4X IP65 (T32XW models)

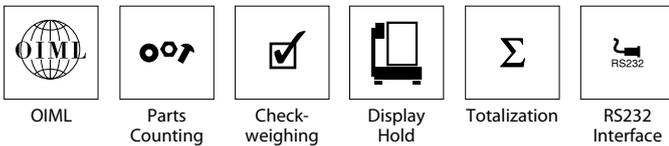
Model	T31P	TD32PE	T32XW
Capacity Range		5 to 20,000 lb or kg	
Maximum Displayed Resolution		1:20,000	
Certified /Approved Resolution		1:6,000	
Auto-Zero Tracking Capture Range		Off, 0.5, 1 or 3 Divisions	
Zeroing Range		2% or 100% of Capacity	
Span Calibration		5 kg or 5 lb to 100% Capacity	
Keypad	4-button mechanical switches, raised tactile keys		4-button membrane switch, raised tactile keys



## T32M INDICATORS

### Economical Metal Indicator for Basic Industrial Applications

- T32MC and T32ME are OIML approved, NTEP certified, and Measurement Canada approved for use in all legal-for-trade applications
- Application modes include weighing, simple parts counting, basic checkweighing, dynamic weighing and accumulation of results
- Constructed of painted steel housing and high-impact ABS faceplate, T32MC and T32ME are highly durable



Model	T32MC	T32ME
Capacity Range	5 to 20,000 lb or kg	
Maximum Displayed Resolution	1:20,000	
Certified / Approved Resolution	1:6,000	
Zeroing Range	2% or 100% of Capacity	
Span Calibration	5 kg or 5 lb to 100% Capacity	
Keypad	4 function mechanical switches, raised tactile keys	



T32MC Indicator (LCD version)



T32ME Indicator (LED version)

## T24P INDICATORS



### Designed for Dependability and Durability at a Practical Price!

- In addition to standard weighing mode, this economical indicator also features parts counting and accumulation functions
- Defender 2000 indicator's red LED indicator clearly displays results that can be seen in locations with less than optimal lighting
- An AC adapter and internal rechargeable lead acid battery provide options for powering your Defender 2000 indicator

Model	T24P
Capacity Range	Up to 20000 kg
Maximum Displayed Resolution	1: 20,000
Zeroing Range	2% or 100% of full scale Capacity
Keypad	4 function mechanical keys, raised, tactile

**Bench Scale Bases & Mechanical & Floor**





## Bench Scale Bases & Mechanical Scales & Floor Scales & Printers

Defender® 5000 Bases

Defender® B Series Bases

Harvard Trip

Triple Beam

Floor scales VE Series

SF40A

# Defender® 5000 BASES



Durable Bases for the Most Demanding of Industrial Applications

- Durably Constructed To Withstand Harsh Industrial Environments
- Install Easily with the EasyConnect™ Feature
- Backed by Global Approvals for Legal-for-Trade Applications



Wash-down Bases



Standard Bases

## Painted Bench Scale Base Specifications

Model	D6RQDR	D15RQDR	D15RTDR	D30RTDR	D60RTDR	D15RQDL
Capacity × Default Readability	3/6 kg × 0.2/0.5 g	6/15 kg × 0.5/1 g		15/30 kg × 1/2 g	30/60 kg × 2/5 g	6/15 kg × 0.5/1 g
Safe Overload Capacity	150% of capacity					
Base Construction	Stainless steel removable weighing platform, powder-coated steel base construction					
Linearity/Repeatability	± 2d					
Load Cell Cable	1.5 m L × 6-wire			2 m L × 6-wire		
Load Cell Type	350 Ohm, aluminum, single point					
Load Cell Excitation	5-15V DC/AC					
Load Cell Rated Output	2mV/V					
Load Cell Protection	IP67					
Base Dimensions (B × A × C × D × E) (mm)	305 × 305 × 99 × 60 × 388		355 × 305 × 99 × 60 × 388			400 × 400 × 120 × 70 × 428

Model	D30RQDL	D60RQDL	D60RTDL	D150RTDL	D60RQDX	D150RQDX
Capacity × Default Readability	15/30 kg × 1/2 g	30/60 kg × 2/5 g		60/150 kg × 5/10 g	30/60 kg × 2/5 g	60/150 kg × 5/10 g
Safe Overload Capacity	150% of capacity					
Base Construction	Stainless steel removable weighing platform, powder-coated steel base construction					
Linearity/Repeatability	± 2d					
Load Cell Cable	2 m L × 6-wire					
Load Cell Type	350 Ohm, aluminum, single point					
Load Cell Excitation	5-15V DC/AC					
Load Cell Rated Output	2mV/V					
Load Cell Protection	IP67					
Base Dimensions (B × A × C × D × E) (mm)	400 × 400 × 120 × 70 × 428		500 × 400 × 110 × 80 × 523		500 × 500 × 120 × 80 × 523	

Model	D60RQDV	D150RQDV	D300RQDV	D150RTDV	D300RTDV	D600RTDV
Capacity × Default Readability	30/60 kg × 2/5 g	60/150 kg × 5/10 g	150/300 kg × 10/20 g	60/150 kg × 5/10 g	150/300 kg × 10/20 g	300/600 kg × 20/50 g
Safe Overload Capacity	150% of capacity					
Base Construction	Stainless steel removable weighing platform, powder-coated steel base construction					
Linearity/Repeatability	± 2d					
Load Cell Cable	2 m L × 6-wire					
Load Cell Type	350 Ohm, aluminum, single point					
Load Cell Excitation	5-15V DC/AC					
Load Cell Rated Output	2mV/V					
Load Cell Protection	IP67					
Base Dimensions (B × A × C × D × E) (mm)	610 × 610 × 130 × 90 × 633			800 × 600 × 132 × 90 × 821		

\*Detail information please kindly refer to product catalog.

## Wash-down Bench Scale Base Specifications

Model	D6WQDR	D15WQDR	D15WQDL	D30WQDL	D60WQDL
Capacity × Default Readability	3/6 kg × 0.2/0.5 g	6/15 kg × 0.5/1 g		15/30 kg × 1/2 g	30/60 kg × 2/5 g
Safe Overload Capacity	150% of capacity				
Base Construction	Stainless steel removable weighing platform with stainless steel frame				
Linearity/Repeatability	± 2d				
Load Cell Cable	1.5 m L × 6-wire			2 m L × 6-wire	
Load Cell Type	350 Ohm, aluminum, single point				
Load Cell Excitation	5-15V DC/AC				
Load Cell Rated Output	2mV/V				
Load Cell Protection	IP67				
Base Dimensions (B × A × C × D × E) (mm)	305 × 305 × 99 × 60 × 328			400 × 400 × 120 × 70 × 423	

Model	D60WTDL	D150WTDL	D60WQDX	D150WQDX	D60WQDV
Capacity × Default Readability	30/60 kg × 2/5 g	60/150 kg × 5/10 g	30/60 kg × 2/5 g	60/150 kg × 5/10 g	30/60 kg × 2/5 g
Safe Overload Capacity	150% of capacity				
Base Construction	Stainless steel removable weighing platform with stainless steel frame				
Linearity/Repeatability	± 2d				
Load Cell Cable	2 m L × 6-wire				
Load Cell Type	350 Ohm, aluminum, single point				
Load Cell Excitation	5-15V DC/AC				
Load Cell Rated Output	2mV/V				
Load Cell Protection	IP67				
Base Dimensions (B × A × C × D × E) (mm)	500 × 400 × 110 × 80 × 523		500 × 500 × 120 × 80 × 523		610 × 610 × 130 × 90 × 633

Model	D150WQDV	D300WQDV	D150WTDV	D300WTDV	D600WTDV
Capacity × Default Readability	60/150 kg × 5/10 g	150/300 kg × 10/20 g	60/150 kg × 5/10 g	150/300 kg × 10/20 g	300/600 kg × 20/50 g
Safe Overload Capacity	150% of capacity				
Base Construction	Stainless steel removable weighing platform with stainless steel frame				
Linearity/Repeatability	± 2d				
Load Cell Cable	2 m L × 6-wire	1.5 m L × 6-wire		2 m L × 6-wire	
Load Cell Type	350 Ohm, aluminum, single point				
Load Cell Excitation	5-15V DC/AC				
Load Cell Rated Output	2mV/V				
Load Cell Protection	IP67				
Base Dimensions (B × A × C × D × E) (mm)	610 × 610 × 130 × 90 × 633			800 × 600 × 132 × 90 × 822	

\*Detail information please kindly refer to product catalog.

## Accessories

OHAUS#	Description
30424410	Column Kit, 35 cm, CS, D52
30424411	Column Kit, 68 cm, CS, D52
30424412	Column Kit, 98 cm, CS, D52
30424413	Column Kit, 35 cm, SST, D52
30424414	Column Kit, 68 cm, SST, D52
30424415	Column Kit, 98 cm, SST, D52
30424024	Front Mount Kit, D52
30424025	Print Holder Kit, D52
30424409	LC Extension Cable, 9 meters, D52 <sup>1</sup>
30429931	Load Cell Cable Adapter Kit, to D52 Base
30372146	Wheel Kit, Defender Series (for bases up to 300 kg) <sup>1</sup>

Note: 1. Cannot be used for legal-for-trade applications

# Defender® B Series BASES



## Economical Base for Industrial Weighing

- The sturdy tubular 304 stainless steel platform provides ample support for industrial weighing applications
- The IP67 load cells ensure accurate and repeatable results
- The non-slip adjustable rubber leveling feet provide stability during the weighing process

### Painted Bench Scale Base

Model	Cap.	Read.	Cert. Read.	Platform Size (mm)
D15BR	15 kg	2 g	5 g	355 x 305
D30BR	30 kg	5 g	10 g	355 x 305
D60BR	60 kg	10 g	20 g	355 x 305
D60BL	60 kg	10 g	20 g	550 x 420
D150BL	150 kg	20 g	50 g	550 x 420
D150BX	150 kg	20 g	50 g	650 x 500
D300BX	300 kg	50 g	100 g	650 x 500

### Wash-down Bench Scale Base

Model	Cap.	Read.	Cert. Read.	Platform Size (mm)
D15VR	15 kg	2 g	5 g	355 x 305
D30VR	30 kg	5 g	10 g	355 x 305
D60VR	60 kg	10 g	20 g	355 x 305
D60VL	60 kg	10 g	20 g	550 x 420
D150VL	150 kg	20 g	50 g	550 x 420
D150VX	150 kg	20 g	50 g	650 x 500
D300VX	300 kg	50 g	100 g	650 x 500



## Harvard Trip

- The built-in sliding masses make weighing very simple and quick.
- Magnetic damping minimizes oscillation and helps speed up weighing.
- A counterbalancing knob provides quick zeroing of the balance while floating agate bearings helps ensure accurate results.



Model	1450-SD	1550-SD	1560-SD
Capacity (g)	2000		
Readability (g)	0.1		
Calibrations: (g)	0.1		
Top Beam	10 x 0.1	10 x 0.1	
Bottom Beam			200 x 10
Stainless Steel Plate (mm)	Ø 152		
Tare Range	—	—	225g

Harvard Trip Accessories	
OHAUS#	Description
80780006	Polypropylene Maxi-Scoop, 10" diameter x 2.5" Deep /25.4 Diameter x 6.4cm Deep (with pouring spout) and counterweight
80850262	Vinyl Dust Cover
80780011	Rod and Clamp Assembly

# Triple Beam



- Three notched and tiered beams with center reading
- Four weighing platforms to choose from
- Spring loaded zero adjust compensator

Triple Beam Accessories	
OHAUS #	Description
80780014	Polypropylene Scoop, 305 × 152 × 70 mm
80780015	Stainless Steel Scoop, 305 × 152 × 70 mm
80780016	Polypropylene Maxi-Scoop, 10" dia. × 2.5" deep pouring spout, weight 142g & 42g counterweight
80780017	Vinyl Dust Cover
80780011	Rod and Clamp Assembly



Stainless steel scoop (model 720-S0)



Animal weighing container (model 730-00)

Model	Triple Beam						Dial-O-Gram®			
	710-00	710-T0	720-S0	730-00	750-S0	760-00	1610-00	1650-00	1650-W0	
Capacity (g)	610						610			2610
Readability (g)	0.1						0.1			
Calibrations:	Front Beam Middle Beam Rear Beam Dial		10g × 0.1g 500g × 100g 100g × 10g —			225g tare 500g × 100g 100g × 10g 10g × 0.1g				
Stainless Steel Pan Size (mm) Platform Diameter × Depth	152 × 19		—			152 × 19		—		
Stainless Steel Scoop L × W × D (mm)	—		305 × 152 × 70		—					
Animal Container Diameter × Height (mm)	—		229 × 152		—					
Stainless Steel Plate Platform Diameter (mm)	—		—		152		—		152	
Tare Range (g)	—	225	—		225		225			



# Triple Beam Pro™

- Ergonomically designed easy-grip carrying handle
- Two notched and tiered beams to provide ease in reading
- Magnetic damping reduces oscillation to speed up weighing



Model	TP2611
Capacity	2610g (when using the attachment weight set-included)
Readability	0.1g
Calibrations:	Front Beam Middle Beam Rear Beam
	10g × 0.1g 500g × 100g 100g × 10g
Stainless Steel Plate Platform Dia.	5.8" × 5.8"
Tare Range	—

Triple Pro Accessories	
OHAUS #	Description
80850312	Security Device for Loop
80850000	Security Device
80780011	Rod and Clamp Assembly



## Floor Scales VE Series

Economical Painted Steel Floor Scales for Basic Industrial Applications

- The VE is ruggedly constructed and includes an epoxy painted steel frame, an ABS plastic indicator, IP65 sealed stainless steel junction box and IP67 sealed load cells
- With a rechargeable lead acid battery included with each VE, position the floor scale freely in the workspace, without having to be forced to work near an outlet
- Painted steel ramps are available to be added to any VE platform, which provides bottom support ribs that prevent the platform from bending under heavy loads



Model	VE1500S31P	VE1500R31P	VE1500L31P	VE3000R31P	VE3000L31P
Capacity × Readability	1,500 × 0.5 kg	1,500 × 0.5 kg	1,500 × 0.5 kg	3,000 × 1 kg	3,000 × 1 kg
Scale Base Size (mm)	1,000 x 1,000	1,250 x 1,250	1,500 x 1,500	1,250 x 1,250	1,500 x 1,500
Construction	Black painted steel platform				

## SF40A



- Multiple Application Modes and Features Support the Data Reporting Process
- Easy Setup And Configuration Eliminate Wasted Time
- Multi-Language Printing Supports Universal Operation

Model	SF40A
Number of Columns	40 columns
Print Speed	Approximately 1.2 lines per second
Paper Roll (W x Dia.)	Standard paper 2.26 in. x Ø 2.36 in. max / 57.5 mm x Ø 60 mm max.
Power Requirements	AC adapter Input: 100 – 240 VAC, 50 - 60 Hz AC adapter output: 12 VDC, 2.5 A
Interface	RS232C
Ambient Temperature	32 °F – 104 °F / 0 °C – 40 °C
Printer Dimensions (W x L x H) (mm)	140 x 205 x 73
Net Weight	740 g (Paper roll included)



# ***DO MORE***

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