

# Growth in Motion

The next evolution in biological shakers – the Innova® S44i



»Make your cells shine in the newest Innova shaker from Eppendorf. The Innova S44i combines the reliable performance of Innova shakers with the latest precision engineering from Eppendorf.«

# »The future is what you make it – Eppendorf makes it reliable.«

Eppendorf has helped scientists achieve better results for over 70 years. Now, we want to move your lab forward by moving shaker technology forward; we want to grow your lab by growing better cultures.

Eppendorf has been a trusted partner to the life science community, and the new Innova S44i Biological Shaker is the next great addition to our renowned portfolio of life science solutions. Expand the potential of your lab and reap the benefits of the exceptional performance and reliability that come with every Eppendorf product.

## Reliable shaking

- > The new Eppendorf X-Drive provides smooth and uniform agitation
- > Intelligent counterbalance mechanism for vibration-free motion and longevity
- > Equally robust for shaking heavy and uneven loads



## Exceeding demands

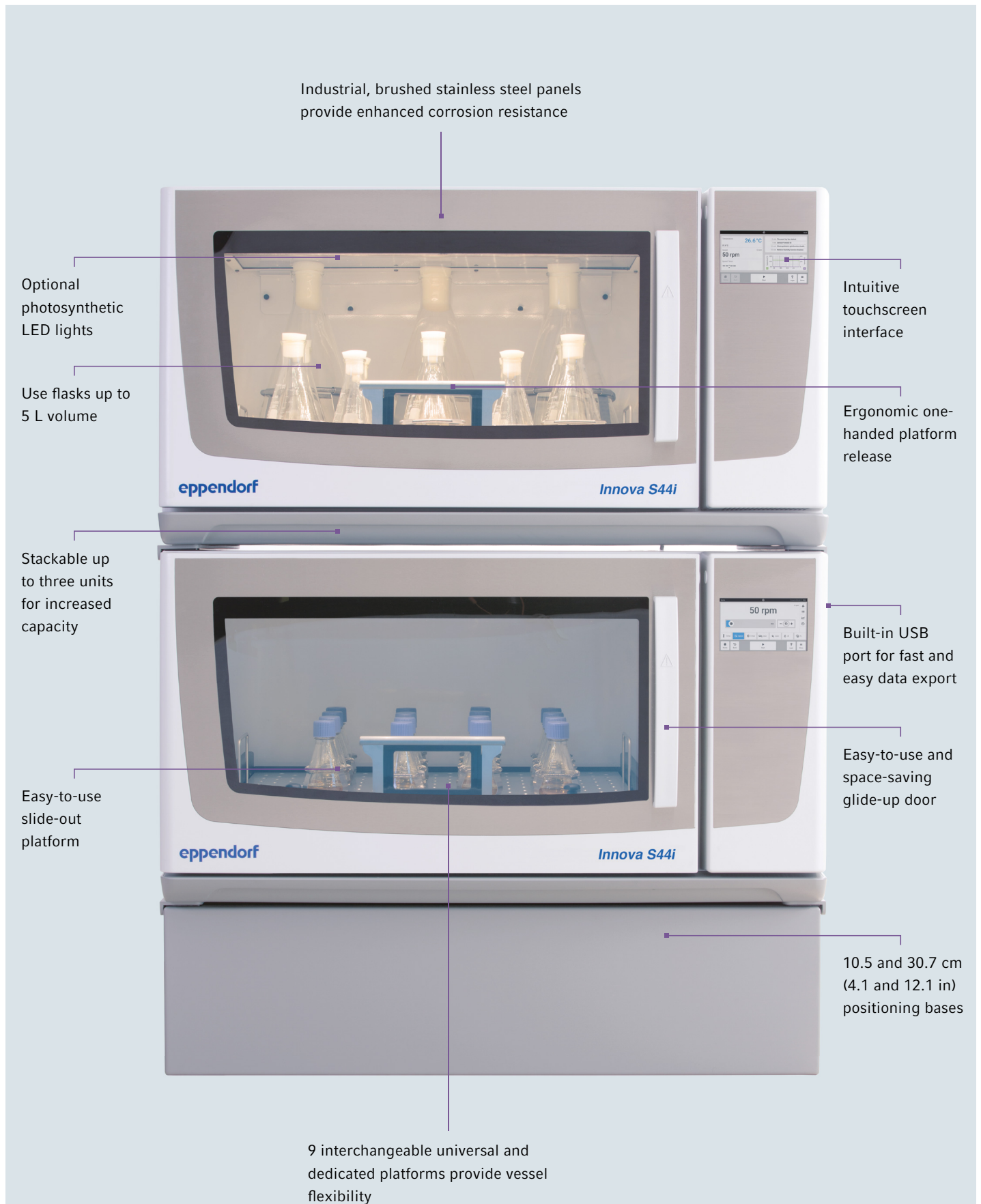
- > Highest flask capacity in a smaller footprint – grow more cells in less space
- > Ethernet connectivity for easy integration with building alarm systems or monitoring software
- > Intuitive touchscreen with user management capabilities



## Exceptionally convenient

- > Optimize your space with double- and triple-stacked configurations
- > Easily reach all your samples using the slide-out platform
- > Glide-up door for convenient and effortless access







Shake faster, smoother, and longer with the new Eppendorf X-Drive Shaker Mechanism. The five eccentric mounting points for the shaker platform are precisely engineered to ensure long-lasting, repeatable performance for years to come.

# Built on Innovation

Since its introduction, the cast iron triple-eccentric drive from Eppendorf has been the gold-standard in shaker drive technology. It is the foundation upon which Eppendorf shakers and the trust of the scientific community are built.

Eppendorf has now designed the next-generation shaker drive to offer you maximum performance, flexibility, and peace-of-mind. We proudly unveil the patented\*, Eppendorf X-Drive.

## A smarter shaker

The Eppendorf X-Drive is precisely engineered with five eccentric shafts to balance even the heaviest load while providing consistent and smooth shaking. The robust and industrial construction of the drive is designed for round-the-clock operation.

Intelligent counterbalance technology of the Eppendorf X-Drive ensures vibration-free shaking even with uneven loads. This advanced technology senses imbalance and decelerates the platform to a safe speed to protect you and your cultures. The intuitive touchscreen controller of the Innova S44i will alert the user and provide step-by-step guidance to resolve imbalance and resume optimal agitation.

- > 80% higher weight capacity on the platform than Innova 44/44R and up to 183% higher weight capacity on the platform than competitors
- > Proprietary technology provides years of reliable operation
- > Efficient oxygen transfer for demanding applications with shaking speeds up to 400 rpm\*\*
- > Available in orbit sizes of 2.5 or 5.1 cm (1 or 2 in) for flexibility

\* Patent number US 8,226,291 B2.

\*\* With 2.5 cm (1 in) orbit only; maximum speed is 300 rpm with 5.1 cm (2 in) orbit

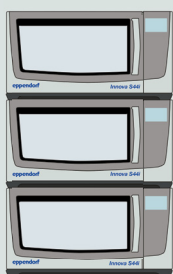
# Gain the Innova® Advantage

The new Innova S44i beats the competition with greater flask and load capacity!<sup>1</sup>

Maximize the potential of your laboratory.

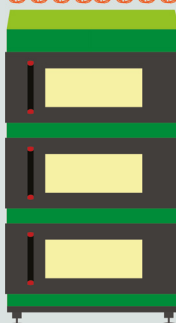
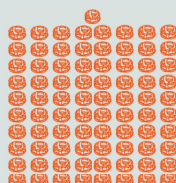
## 500 mL Erlenmeyer Flasks on Universal Platform

108 flasks  
(+ 33 %)



Innova S44i

81 flasks



Competitor

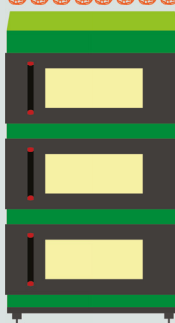
## 2 L Erlenmeyer Flasks on Dedicated Platform

45 flasks  
(+ 15 %)



Innova S44i

39 flasks



Competitor

### Engineered to perform

The Innova S44i has optimized chamber, platform, and features to maximize your options and capacity.

- > Up to 156% more flask capacity than the previous Innova 44 with a smaller footprint<sup>2</sup>
- > Up to 102% higher flask capacity than competitor<sup>2</sup>
- > Chamber easily accommodates up to 5 L Erlenmeyer flasks and a large variety of racks, plates, and vessels for flexibility
- > Double- or triple-stack the Innova S44i to increase capacity without sacrificing more valuable lab space
- > Optional static shelf for incubating samples that do not require agitation

### Applications

Expand your potential and utilize the Innova S44i for even more processes and applications.

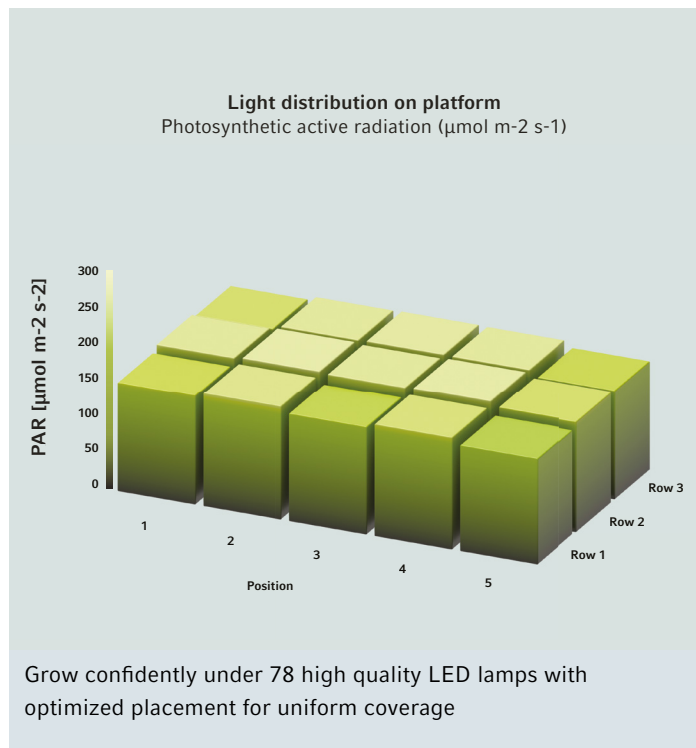
- > Grow bacteria, yeast, fungus, cyanobacteria, and algae
- > Plasmid DNA production and protein expression
- > Process and media development
- > Media screening and optimization
- > Seed cultures for bioprocess scale-up
- > Biofuel research
- > Food quality testing

<sup>1</sup> Based on published data.

<sup>2</sup> 25 mL Erlenmeyer flask capacity on universal platform:  
Innova S44i – 238  
Innova 44 – 93  
Competitor – 118



Grow phototrophic cells using integrated photosynthetic LED lights



Grow confidently under 78 high quality LED lamps with optimized placement for uniform coverage

# Excellent Control

The Innova S44i is designed to adapt to your needs and meet your strict requirements. It is one of the most versatile shakers of its kind and allows for virtually any application:

## Exact temperature control

The Innova S44i provides broad temperature capabilities for culturing a wide variety of organisms. Consistent temperature control and quick recovery rate maintain optimum conditions for cell growth.

- > Precise temperature control from 5 °C above ambient to 80 °C<sup>3</sup>
- > Refrigerated model provides temperature control down to 4 °C (environmentally friendly CFC-free refrigerant)
- > High temperature uniformity across the entire platform for reproducible results
- > Triple-pane insulated glass window maintains stable chamber conditions for energy-efficient operation

## Photosynthetic LED lights

Installed before leaving the factory, this high-quality light source lets you grow more cells more efficiently as soon as the shaker arrives in your lab.

- > Grow algae, cyanobacteria, and other phototrophic cells
- > Highly uniform light coverage across the entire platform
- > Control light intensity levels using responsive and easy-to-use touchscreen
- > Easily program LED lights to turn ON/OFF and change intensity at timed intervals to mimic circadian rhythm; programs can be looped for ultimate convenience

<sup>3</sup> Maximum temperature cannot exceed 60 °C if photosynthetic LED lights option is in place.

# Advanced Operation

The new touchscreen user interface of the Innova S44i offers more than just easy operation. This multi-touch capacitive display makes all the information you need easy to monitor and track.

## Intuitive operating, distinct design

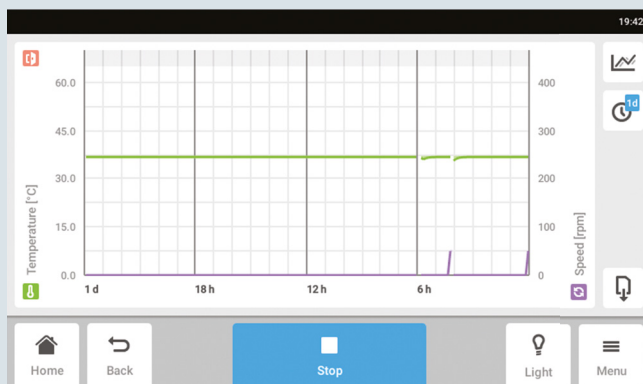
- > Information is just one touch away: alarm status, event log, and user information
- > Comprehensive data at your fingertips: see the performance history of your device and view informative graphs
- > Configure the home screen to your ideal needs: get intuitive and fast access to all functions that are relevant to you
- > Make complicated runs simple: create multi-step programs for automated control of the shaker
- > Manage multiple users with different levels of authorization for device access: supports traceability requirements in regulated labs

## State-of-the-art touch screen technology

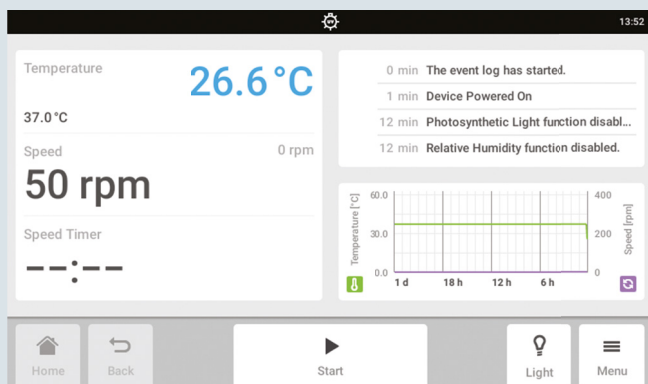
- > Whether wearing lab gloves (nitril or latex) or using your bare hands, it doesn't make a difference
- > The longevity you expect from Eppendorf: durable and easy to clean



Whether you are wearing gloves or not, the touchscreen is always responsive and easy to use



Easily access your trend and tracking data with multiple graphs; export data via USB drive

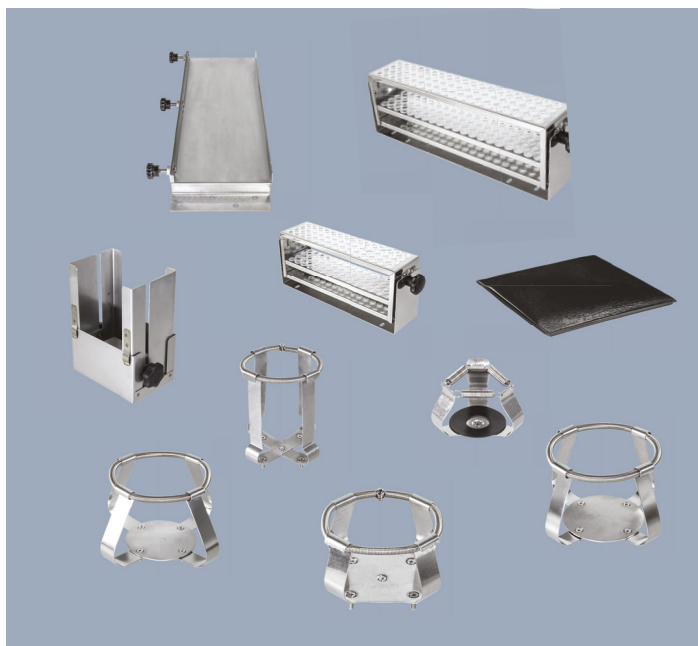


See the setpoints that are important to you with a customizable home screen – ll your data in one glance



Adjusting your setpoint is simple and fast using either the scroll bar, +/- buttons, or numbered keypad





Our universal and dedicated platforms, along with a vast portfolio of accessories, provide over 10,000 unique configurations



Accessory window shade will block external light from the chamber to protect your light-sensitive materials and cultures

# Customize Your Process

## Grow it your way

Eppendorf is your single source for life science solutions. Along with the new Innova S44i Biological Shaker, Eppendorf is proud to offer a wide range of accessories to allow you to customize your process. We provide the tools and expertise you need to make your applications a success.

From the smallest flask clamp to the largest rack, our extensive collection of accessories can be interchanged to give you the exact shaker and incubator environment that you require. When you combine the number of accessories with the range of S44i options available, the result is thousands and thousands of custom solutions for every life science laboratory.

- > 9 different universal and dedicated platforms that can be easily interchanged to quickly meet changing requirements
- > Universal platform optimized for maximum capacity to give you the freedom to mix and match your accessories for custom solutions
- > Sticky pads are available and can be applied on both universal and dedicated platforms
- > 18 different sizes of test tube racks for your convenience and flexibility
- > Microplate racks for attaching plates in layers or stacks, depending on your needs
- > Perforated static incubation shelf for incubating dishes





Conveniently reach all areas of the shaker platform and chamber using the slide-out tray



Easy-to-use glide-up door lets users open door with minimal force and gives full access to samples

# Designed for Your Comfort and Ease



## Raising the bar

The Eppendorf PhysioCare Concept® was developed to optimize ergonomics of laboratory devices. Each instrument at Eppendorf is developed with the PhysioCare Concept to provide comprehensive solutions for improved user and lab safety. The new Innova S44i follows in this tradition of conscious design to reduce user stress, support an ergonomic workspace, and provide optimal workflow in the lab.

- > Glide-up door provides effortless access to the chamber; easily opened with one hand and little force
- > New slide-out platform design with quick-release handle for comfortable access to samples at the back
- > Entire platform can be removed and replaced quickly using two fasteners at the front of the chamber

## Excellent convenience and safety

- > Intuitive programming for complete automated control; any of the key parameters can be changed at timed intervals for ultimate convenience
- > Large window and chamber light allows viewing of samples without disturbing cultures
- > Large access port for addition of multiple sensors
- > Refrigeration and reservoir drain ports on the side make routine maintenance easy
- > Ethernet interface to connect the shaker to your computer or network
- > Fast and gentle stopping of shaker when the door is opened for maximum user safety

**Innova® S44i Ordering Information**

Orbit	Europe <sup>†</sup>	USA	Japan
	230 V, 50/60 Hz	120 V, 50/60 Hz	100 V, 50/60 Hz
2.5 cm (1 in) orbit, incubated	S44I300001	S44I200005	S44I200006
2.5 cm (1 in) orbit, refrigerated	S44I310001	S44I210005	S44I210006
2.5 cm (1 in) orbit, refrigerated, photosynthetic LED lights	S44I311001	S44I211005	
5.1 cm (2 in) orbit, incubated	S44I320001	S44I220005	S44I220006
5.1 cm (2 in) orbit, refrigerated	S44I330001	S44I230005	S44I230006
5.1 cm (2 in) orbit, refrigerated, photosynthetic LED lights	S44I331001	S44I231005	

<sup>†</sup>Last digit is country dependent. For UK/HKG, change 1 to 2; for Australia, change 1 to 3; for China, change 1 to 4; for Argentina, change 1 to 8; for Brazil, change 1 to 9.


**Additional Accessories Ordering Information**

Description	Order No.
Darkening window shade	S44I042002
Static incubation shelf	S44I042001
10.5 cm (4.1 in) positioning base <sup>*</sup>	S44I041001
30.7 cm (12.1 in) positioning base <sup>*</sup>	S44I041002
Stacking kit, double stack of Innova® S44i	S44I041005
Stacking kit, triple stack of Innova® S44i	S44I041003
Stacking kit, Innova® S44i to Innova® 44/44R <sup>**</sup>	S44I041006

<sup>\*</sup>All Innova® S44i shakers must be installed on a positioning base.

<sup>\*\*</sup>Maximum agitation speed of Innova® S44i reduced to 300 rpm when stacked on one Innova® 44/44R and 250 rpm when triple stacked.

**Innova® S44i Technical Specifications<sup>1</sup>**

Temperature	
Temperature range <sup>2</sup>	Incubated 5 °C above ambient temperature to 80 °C Refrigerated 20 °C below ambient temperature (minimum 4 °C) to 80 °C
Control increments	±0.1 °C
Control accuracy	±0.1 °C at 37 °C
Uniformity	±0.25 °C at 37 °C and 250 rpm
Agitation	
Drive	Eppendorf X-Drive with semi-automated counterbalance
Orbit	2.5 cm (1 in) or 5.1 cm (2 in)
Speed	2.5 cm (1 in) orbit: 20 – 400 rpm 5.1 cm (2 in) orbit: 20 – 300 rpm
Control increments	±1 rpm
Control accuracy	±0.5 rpm
Maximum platform load	35.4 kg (78.3 lb)
Photosynthetic LED lights	
Main wavelength	Wide band spectrum; 400 nm – 700 nm
Intensity range	15 PAR to 150 PAR
Control increments	1 PAR
Light uniformity	±10 %
Program modes	
Timed mode	Up to 95:59 hours; timed programs with multiple steps and cycling
Dimensions and weight	
External dimensions, single unit (W × D × H)	118.2 × 95.8 × 63.1 cm (46.5 × 37.7 × 24.8 in), plus positioning base of choice
Platform dimensions (W × D × H)	76.2 × 62.0 × 0.8 cm (30.0 × 24.4 × 0.3 in)
Net weight	Incubated 186 kg (411 lb)
	Refrigerated 198 kg (437 lb)
	Platform 10 kg (22 lb)
Interfaces	USB and Ethernet
Certifications	

<sup>1</sup>Specifications subject to change.

<sup>2</sup>Maximum temperature cannot exceed 60 °C if photosynthetic LED lights option is in place.



# Eppendorf Handling Solutions

Liquid Handling  
Cell Handling  
Sample Handling

To make your job in the lab easier and more efficient – with this goal in mind we are developing products and solutions in the areas of Liquid Handling, Cell Handling, and Sample Handling. Visit the Eppendorf Handling Solutions online sphere and dive into the area of your choice, learn new things, and have fun as well: [www.eppendorf.com/handling-solutions](http://www.eppendorf.com/handling-solutions)



## Liquid Handling



In 1961, Eppendorf launched the first piston-stroke pipette. Today, our broad product offerings in Liquid Handling range from manual pipettes to electronic pipettes, dispensers and burettes to automated pipetting systems. Eppendorf products are associated with state-of-the-art technology, outstanding ergonomics and award-winning design. This applies to both devices and the requisite consumables such as pipette tips and Combitips®.



### ■ Multipette® E3/E3x

A motor-driven dispensing system that utilizes the positive displacement principle and is capable of accurately pipetting any liquid.

- > Eliminates time-consuming volume calculations with auto Combitip recognition
- > One-button tip ejector for one-handed operation and contact-free advanced ejection



### ■ Eppendorf Combitips advanced®

Eppendorf Combitips advanced have been completely redesigned and optimized to meet all the needs of any modern laboratory.

- > The 9 volume sizes (0.1 mL – 50 mL) offer a maximum range of dispensing volumes
- > High-precision dispensing regardless of the physical properties of the liquid



### ■ epMotion® 96

The Eppendorf epMotion 96 is a semi-automated electronic pipette for fast and precise parallel 96-channel microplate processing.

- > Without changes to the system, a large volume range of 0.5 µL to 300 µL is available
- > Performs 12 times faster than 8-channel pipettes



### ■ Eppendorf Xplorer®

The Eppendorf Xplorer electronic pipettes are designed to eliminate many potential error risks associated with manual pipetting.

- > Single, 8-, and 12-channel pipettes for liquid volumes from 0.5 µL to 10 mL
- > Intuitive operating concept for quick and easy work



## Are You Pipetting With Problematic Liquids?

Find out tips on [www.eppendorf.com/pipetting](http://www.eppendorf.com/pipetting)

**Universal Platform Flask Clamp Capacities**

<b>Description</b>	<b>No. of clamps</b>
10 mL Erlenmeyer flask clamps	238
25 mL Erlenmeyer flask clamps	238
50 mL Erlenmeyer flask clamps	130
125 mL Erlenmeyer flask clamps	81
250 mL Erlenmeyer flask clamps	49
500 mL Erlenmeyer flask clamps	36
1000 mL Erlenmeyer flask clamps	20
2000 mL Erlenmeyer flask clamps	13
2000 mL Lauber Thomson clamp	15
2800 mL Fernbach flask clamps	8
3000 mL Erlenmeyer flask clamps	8
4000 mL Erlenmeyer flask clamps	8
5000 mL Erlenmeyer flask clamps	6
Test tube racks, small	12
Test tube racks, medium	10
Test tube racks, large	8
Microplate racks, for single layer of five plates	4
Microplate racks, stack three deepwell or nine standard plates	20
Sticky pads	9

**Innova® S44i Platform Ordering Information**

<b>Description</b>	<b>No. of clamps</b>	<b>Order No.</b>
Universal platform		S44I040001
125 mL Erlenmeyer flask dedicated platform	86	S44I040002
250 mL Erlenmeyer flask dedicated platform	53	S44I040003
500 mL Erlenmeyer flask dedicated platform	39	S44I040004
1000 mL Erlenmeyer flask dedicated platform	23	S44I040005
2000 mL Erlenmeyer flask dedicated platform	15	S44I040006
2000 mL Lauber Thomson flask dedicated platform	15	S44I040010
2800 mL Fernbach flask dedicated platform	8	S44I040007
4000 mL Erlenmeyer flask dedicated platform	8	S44I040008

**Flask Clamp Ordering Information**

<b>Description</b>	<b>Order No.</b>
10 mL Erlenmeyer flask clamps	ACE-10S
25 mL Erlenmeyer flask clamps	M1190-9004
50 mL Erlenmeyer flask clamps	M1190-9000
125 mL Erlenmeyer flask clamps	M1190-9001
250 mL Erlenmeyer flask clamps	M1190-9002
500 mL Erlenmeyer flask clamps	M1190-9003
1000 mL Erlenmeyer flask clamps	ACE-1000S
2000 mL Erlenmeyer flask clamps	ACE-2000S
2000 mL Lauber Thomson flask clamps	M1190-9005
2800 mL Fernbach flask clamps	ACFE-2800S
3000 mL Erlenmeyer flask clamps	ACE-3000S
4000 mL Erlenmeyer flask clamps	ACE-4000S
5000 mL Erlenmeyer flask clamps	ACE-5000S

**Platform Accessories Ordering Information**

Description	Order No.
Microplate rack, stack three deepwell or nine standard plates	M1289-0700
Microplate rack, for single layer of five plates	TTR-221
Sticky tape, 500 × 4.1 cm	M1250-9600
Sticky pad, 20 × 20 cm	M1250-9700
Angled test tube rack holder, for user-supplied test tube racks and microplates	TTR-210
Spacer bar for TTR-210	TTR-215
<b>Test tube racks, small</b>	
8 – 11 mm diameter	M1289-0001
12 – 15 mm diameter	M1289-0002
15 – 18 mm diameter	M1289-0003
18 – 21 mm diameter	M1289-0004
22 – 26 mm diameter	M1289-0005
26 – 30 mm diameter	M1289-0006
<b>Test tube racks, medium</b>	
8 – 11 mm diameter	M1289-0010
12 – 15 mm diameter	M1289-0020
15 – 18 mm diameter	M1289-0030
18 – 21 mm diameter	M1289-0040
22 – 26 mm diameter	M1289-0050
26 – 30 mm diameter	M1289-0060
<b>Test Tube racks, large</b>	
8 – 11 mm diameter	M1289-0100
12 – 15 mm diameter	M1289-0200
15 – 18 mm diameter	M1289-0300
18 – 21 mm diameter	M1289-0400
22 – 26 mm diameter	M1289-0500
26 – 30 mm diameter	M1289-0600

## Trust Your Innova® S44i in the Hands of Eppendorf Service



Eppendorf shaker service solutions help you comply with regulatory requirements and ensure the consistent and reliable performance of your biological shaker over the full service life. A comprehensive list of services ranging from professional installation, Installation Qualification (IQ), Operational Qualification (OQ), and a variety of service maintenance packages are available. An annual inspection by an Eppendorf certified service technician is highly recommended for peak performance and years of productive operation.

**Performance Plans for Innova® S44i Ordering Information**

Description	Order No.
Installation service	0082 080 231
Installation Qualification (IQ)	0082 080 217
Operational Qualification (OQ)	0082 080 218
Installation Qualification/Operational Qualification (IQ/OQ)	0082 080 219
Essential check	0082 080 213
Advanced maintenance	0082 080 214
Premium service	0082 080 215
Deep chamber cleaning	0082 080 237

> For further information: [www.eppendorf.com/epServices](http://www.eppendorf.com/epServices)

# »Explore the biological shaker of the future: the Innova<sup>®</sup> S44i«

**Your local distributor: [www.eppendorf.com/contact](http://www.eppendorf.com/contact)**  
Eppendorf AG · Barkhausenweg 1 · 22339 Hamburg · Germany  
[eppendorf@eppendorf.com](mailto:eppendorf@eppendorf.com) · [www.eppendorf.com](http://www.eppendorf.com)

[www.eppendorf.com/InnovaS44i](http://www.eppendorf.com/InnovaS44i)

