eppendorf

The Shaker Source

Grow More, Grow Better—Eppendorf Shakers


innova 42
Incubator Shaker Series

»Consistency across runs, reliability across generations.«

Eppendorf life science solutions have been helping scientists for over 75 years. This history allowed for the evolution of engineering principles, refined over many years, with the long-term view of one of the most well-known & trusted brands in the life science industry.

The result: our customers are at the cutting edge of science and we are evolving to accommodate their requirements.

An innovative legacy

> For over 70 years, New Brunswick™ shakers from have set the benchmark for robust laboratory orbital shakers
> Orbital shakers built with customer applications in mind – long run times and increasing throughput

Drive mechanisms built to last

> The Eppendorf Triple Eccentric Drive made from cast iron for dependability and stability
> The Eppendorf X-Drive is designed from the ground up for shaking greater loads at greater speeds
> Well-suited for routine applications

Your source for scale-up

> From the smallest plate on the smallest benchtop up to triple-stacked high capacity shakers for process optimization - Eppendorf products facilitate you along your scale-up journey
> Eppendorf is your source for when your processes demand the exacting control of bioprocess vessels
> Applications support to guide you along the way

An Innovative Legacy

The legacy began in 1946: the first shaker was developed for Dr. Selman Waksman, who was awarded the Nobel Prize in Medicine for discovering the first antibiotic successfully used against tuberculosis. Eppendorf shakers continue that tradition of innovation and reliability.

Eppendorf Shakers continue to be a global market leader

> Each generation of shakers has outperformed its predecessor
> Many shakers have been in operation for over 40 years and remain in operation today
> Pioneering stackable and microprocessor controlled shakers
> There are added features and expanded options with each new generation, but the same Eppendorf quality exists today

1946

The first shaker is developed by the Friedman Brothers and New Brunswick Scientific is born. Dr. Selman Waksman of Rutgers uses an updated version of the first New Brunswick Shaker and is awarded the Nobel Prize in Medicine for the first antibiotic that successfully treats Tuberculosis.

1972

The G-Series, the first incubated shakers, are developed. The triple eccentric drive mechanism is born and is still in use today. For the first time, scientists can grow microbial cultures and solutions under controlled conditions of temperature and high rates of agitation.

1997

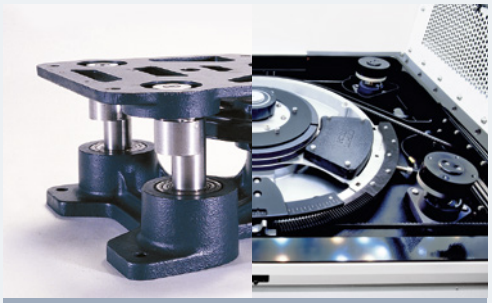
The introduction of the C-Series and the first Innova line of shakers. State of the art microprocessor controls provide researchers enhanced temperature accuracy and uniformity. The first stackable shaker is developed, providing users more capacity without increasing the necessary space.

2007

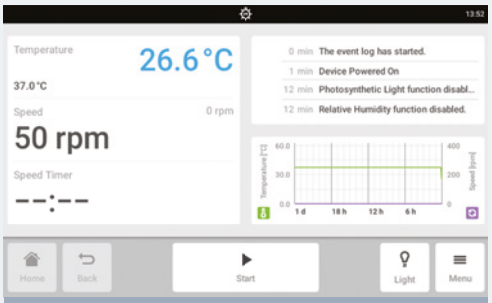
New Brunswick introduces an enhanced line of Innova® shakers, recognized as the gold standard for orbital shakers. Excella replaces the C-Series of shakers, built for both performance and value. New Brunswick becomes part of Eppendorf; aligning the market leader in shakers with a leader in lab products.

Eppendorf Shakers
keep pace with the modern lab
As the requirements and demands of your applications continue to expand, Eppendorf has continued the proud New Brunswick legacy of meeting your needs with our expanding product lines.

> Introducing new technologies for more substantial shakers
> Cultivating convenience and ease-of-use
> Expanding customer support to keep you running at all times
> Increasing throughput to keep your lab competitive



Our drives have grown and gotten smarter



Our controls and software offer greater flexibility and control

PhysioCare concept

Our devices are more ergonomic and comfortable to use

Our capacities and options have expanded to meet expanding requirements

2017

Eppendorf introduces the Innova S44i incubator shaker and the latest in drive technology–the Eppendorf X-Drive. With optimized agitation and control, along with increased capacity and application options, the Innova S44i is the latest step forward in Eppendorf shaker innovation, enabling scientists to go further, faster.

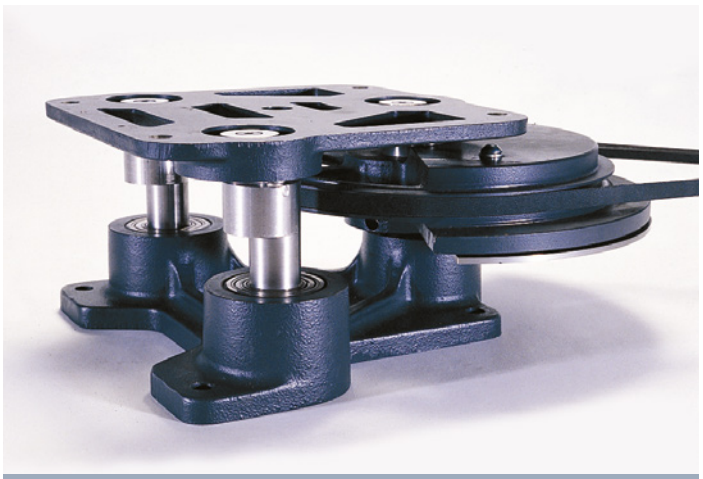
Built to Perform

Driving growth and excellence
Since its introduction almost 50 years ago, 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 optimal performance, flexibility, and peace-of-mind. We proudly unveil the patented[*1], Eppendorf X-Drive.

Eppendorf X-Drive, available in Innova S44i models

Shake with ease
The Eppendorf X-Drive is precisely engineered with five-eccentric shafts to balance even heavy loads while providing consistent and smooth shaking.

> The robust and industrial construction of the drive is designed for around-the-clock operation.
> Intelligent counterbalance technology of the Eppendorf X-Drive ensures vibration-free shaking even with uneven loads
> Up to 80 % higher load capacity than Innova 44/44R and up to 183 % higher load capacity than competitor
> Efficient oxygen transfer for demanding applications with shaking speeds up to 400 rpm*[2]
> Available in orbit sizes of 2.5 or 5.1 cm (1 or 2 in)



Eppendorf triple-eccentric drive, available in other Innova models

Built to last
Heavy-duty construction of the triple-eccentric drive gives you confidence that our shakers will perform to your specifications, even when fully loaded and operating at top speed.

> Components are fabricated to exacting specifications ensuring stable, vibration-free operation
> Drive mechanisms properly sized to each shaker, and specifically designed to support high-speed applications and heavy workloads, around-the-clock
> Made of the highest-quality materials, with superior design and precision fabrication, Innova shakers with triple-eccentric drives have provided scientists with decades of worry-free operation and will continue to do so for many decades to come.

*[1] Patent number US 8,226,291 B2.
*[2] With 2.5 (1 in) cm orbit only; maximum speed is 300 rpm with 5.1 cm (2 in) orbit

> For more information go to www.eppendorf.com/shakers

Advanced Operation

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

Intuitive operating, distinct design

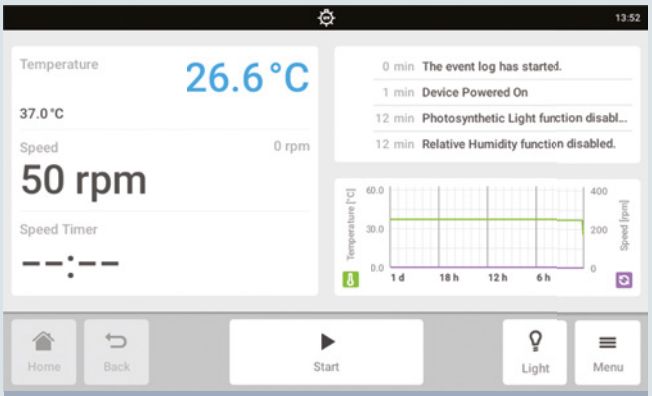
> Information is just one touch away: alarm status, event log, and user information
> Comprehensive data at your fingertips: see the performance history of your device and view informative graphs
> Configure the home screen to your ideal needs: get intuitive and fast access to all functions that are relevant to you and your application
> Make complicated runs simple: create multi-step or loop 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 (nitryl or latex) or using your bare hands, it doesn't make a difference – it simply works
> The longevity you expect from Eppendorf: durable, easy to use, and easy to clean

With or without gloves, the touchscreen is always responsive and easy to use

Easily access your trend and tracking data with multiple graphs; export data via secure formats



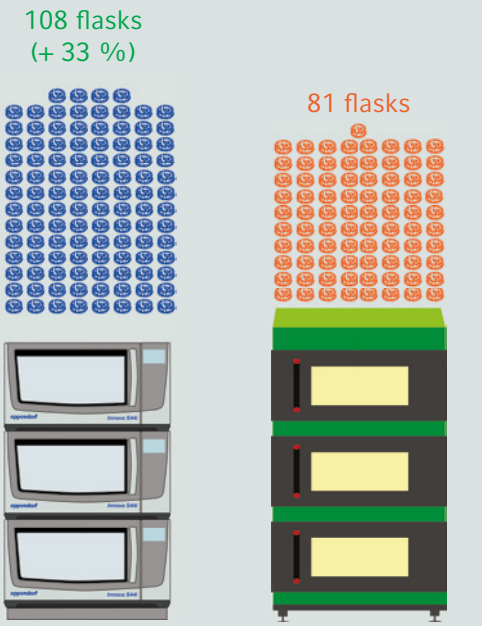
Relevant data at a glance – the customizable home screen allows you to monitor what's important to you

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

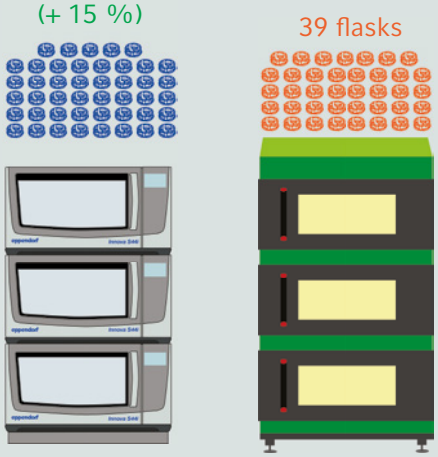
Grow More

The new Innova S44i beats the competition with greater flask and load capacity![1]
Maximize the potential of your laboratory.

500 mL Erlenmeyer Flasks on Universal Platform



2 L Erlenmeyer Flasks on Dedicated Platform



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[2]
> Up to 102% higher flask capacity than competitor[2]
> 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

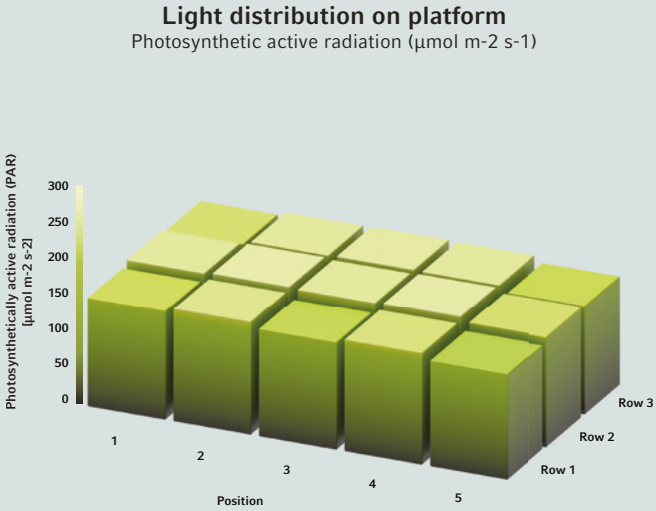
Applications

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

> Grow bacteria, yeast, fungus, insect cells, plant cells 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

[1] Based on published data.
[2] 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:

Exacting temperature control
The Innova S44i provides broad temperature capabilities for culturing a wide variety of organisms. Consistent temperature control maintains optimum conditions for cell growth.

> Precise temperature control from 5 °C above ambient to 80 °C [3]
> Refrigerated model provides temperature control down to 4 °C
> 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 cells efficiently as soon as the shaker arrives in your lab.

> Grow algae, plant cells, 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

[3] Maximum temperature cannot exceed 60 °C if photosynthetic LED lights option is in place.

The Future of Smart Cultivation with Innova® & VisioNize

Stay connected to critical information about the Innova S44i even when you are not in the lab with remote monitoring and notifications enabled by VisioNize. Pre-installed, customer-programmed tasks and alarms can be easily set directly at the VisioNize touch interface.

Establish specific cell-conserving user habits in your lab and relieve you off the burdens of daily routines.

Easy and Comprehensive Documentation
Filter and export performance charts, events, or protocols within seconds to fulfill ever-increasing demands for documentation of cell culture conditions, e.g. for regulated environments. You can track back with only one click what happened during cultivation with VisioNize monitoring.

Standard and Customized Tasks
Pre-installed and customer-programmed tasks can be set with the VisioNize touch interface to remind you of regular tasks, e.g. performance of a disinfection cycle, cleaning, splitting cells, refilling the water reservoir, or performance checks with external sensors.

Evolved integrated alarm system
Define critical values e.g. door-opening time or orbital speed that trigger a highly visible on screen and audible alarm. In addition, you can receive SMS or e-mail notifications by VisioNize notifications. This way, you can ensure a stable environment for your cultured cells and establish cell-conserving user habits in your lab.

Learn more at:
www.eppendorf.com/Smart-Cultivation

Bridge the Gap

Making the investment in more robust bioprocessing vessels and systems can be intimidating. Eppendorf supplies the solutions, techniques, and applications to make your commitment less daunting and more efficient.

Eppendorf shakers fill the large need for economical applications with high-throughput, customizable parameters, and precise control. You can trust that your Erlenmeyer flasks, plates, culture dishes, and other materials will be safe and productive within our reliable Innova devices.

But often, your work with shakers is a stepping stone to higher volumes and more complex applications. Eppendorf is here to bring the tools and expertise required to make the jump to bioprocess vessels. Use the advanced features and variety of shaker options to define, test, and refine your growth conditions. Then, when the time comes to scale-up, you can expand your process with Eppendorf Bioprocess solutions.

Eppendorf provides:

> Shaker programmability to of temperature and speed profiles to regulate cell growth
> Precise shaker conditions on which you can base your research
> Bioprocess controllers and vessels with the accuracy and control that you require
> Bioprocess systems from 60 mL small-scale up to 1,200 L pilot/production-scale
> Applications and service support to assist you and your work – from first inquiry through final production

Eppendorf – with you every step of the way.

Eppendorf offers users from research and industry extensive life science solutions from a single source that meet the high demands for quality and reproducibility.

Incubator Shakers

Model	Innova® S44i	Innova® 44/44R
Temperature range	> Incubated: 5 °C above ambient to 80 °C > Refrigerated: 20 °C below ambient (min. 4 °C) to 80 °C	> Incubated: 5 °C above ambient to 80 °C > Refrigerated: 20 °C below ambient (min. 4 °C) to 80 °C[1)]
Temperature uniformity	±0.25 °C at 37 °C and 250 rpm	±0.25 °C at 37 °C
Speed range	> 2.5 cm orbit: 20 – 400 rpm > 5.1 cm orbit: 20 – 300 rpm	> 2.5 cm orbit: 25 – 400 rpm > 5.1 cm orbit or 2 stacked units: 25 – 300 rpm > 3 stacked units: 25 – 250 rpm
Orbit options	> 2.5 cm (1.0 in) > 5.1 cm (2.0 in)	> 2.5 cm (1.0 in) > 5.1 cm (2.0 in)
Placement/orientation	> Floor > Stackable (x3)	> Floor > Stackable (x3)
Platform size	76 × 62 cm (30 × 24 in)	76 × 46 cm (30 × 18 in)
Slide-out platform	yes	yes
Drive mechanism	Eppendorf X-Drive with semi-automated counterbalance setting	Triple-eccentric counterbalanced drive
Motor type	Solid state, DC brushless motor	Solid state, DC brushless motor
Dimensions (W × D × H) excluding base	118.2 × 86.9 × 63.0 cm (46.5 × 34.2 × 24.8 in)	134.9 × 84.3 × 66.0 cm (53.1 × 33.2 × 26 in)
External height (with lid/door open)	114.1 cm (44.9 in) excluding base	119.0 cm (46.9 in) excluding base
External depth (with door open)	–	–
Space-saving glide-up doors	yes	yes
Weight, single unit, incubated w/o options	178 kg (392 lb)	238 kg (525 lb)
Audible and visual alarms	yes	yes
Available program modes	> Constant speed and temperature > Timed shaking mode up to 95:59 hours > Multi step programming/cycling – parameters include shaking speed, temperature, and (optional) photosynthetic light intensity	> Constant speed and temperature > Programmable multi-steps > RS-232 communication port
Steps per program	unlimited	15
Stored programs	unlimited	4
Timer	0.01 – 95.59 h, continuous	0.01 – 99.59 h, continuous
Remote Device Monitoring and Notifications (VisioNize)	VisioNize®-onboard	VisioNize®-qualified

[1)] Configuration dependent

Innova® 43/43R	**Innova® 42/42R**	**Innova® 40/40R**
> Incubated: 5 °C above ambient to 80 °C > Refrigerated: 20 °C below ambient (min. 4 °C) to 80 °C[1)]	> Incubated: 5 °C above ambient to 80 °C > Refrigerated: 20 °C below ambient (min. 4 °C) to 80 °C[1)]	> Incubated: 5 °C above ambient to 80 °C > Refrigerated: 15 °C below ambient (min. 4 °C) to 80 °C
±0.25 °C at 37 °C	±0.25 °C at 37 °C	±0.25 °C at 37 °C
> 2.5 cm orbit: 25 – 500 rpm > 5.1 cm orbit: 25 – 300 rpm	> 1.9 cm orbit: 25 – 400 rpm > 2.5 cm orbit: 25 – 400 rpm > With flasks larger than 500 mL in stacked devices: 25 – 300 rpm	> 1.9 cm orbit: 25 – 500 rpm > 2.5 cm orbit: 25 – 500 rpm
> 2.5 cm (1.0 in) > 5.1 cm (2.0 in)	> 1.9 cm (0.75 in) > 2.5 cm (1.0 in)	> 1.9 cm (0.75 in) > 2.5 cm (1.0 in)
> Floor standing	> Benchtop > Underbench > Floor standing > Stackable (x2)	> Benchtop
76 × 46 cm (30 × 18 in)	46 × 46 cm (18 × 18 in)	46 × 46 cm (18 × 18 in)
–	–	–
Triple-eccentric counterbalanced drive	Triple-eccentric counterbalanced drive	Triple-eccentric counterbalanced drive
Solid state, DC brushless motor	Solid state, DC brushless motor	Solid state, DC brushless motor
115.6 × 81.3 × 103.1 cm (45.5 × 32.0 × 40.6 in)	63.5 × 74.5 × 81.8 cm (25.0 × 29.3 × 32.2 in)	55.9 × 76.2 × 61.0 cm (22.0 × 30.0 × 24.0 in)
162.8 cm (64.1 in)	–	101.6 cm (40 in)
–	131 cm (51.6 in)	–
–	–	–
209 kg (445 lb)	98 kg (217 lb)	60 kg (133 lb)
yes	yes	yes
> Constant speed and temperature > Programmable multi-steps > RS-232 communication port	> Constant speed and temperature > Programmable multi-steps > RS-232 communication port	> Constant speed and temperature > Programmable multi-steps > RS-232 communication port
15	15	15
4	4	4
0.01 – 99.59 h, continuous	0.01 – 99.59 h, continuous	0.01 – 99.59 h, continuous
VisioNize®-qualified	VisioNize®-qualified	VisioNize®-qualified

Innova® S44i

Optional photosynthetic LED lights with adjustable intensity

Stackable up to three units for increased capacity

Easy-to-use slide-out platform

Intuitive VisioNize touch interface

Space-saving glide-up doors

Built-in USB port for fast and easy data export

Ergonomic one-handed platform release

Growth in motion

The Innova S44i incubator shaker is the latest and most advanced microbiological shaker we have ever released. Combining the expertise of New Brunswick with that of Eppendorf, we can provide a large-scale incubator shaker that meets the demands of tomorrow's scientists. A reliable drive unit combined with efficient use of space and an array of options allows the Innova S44i to be a part of numerous workflows whilst having the capability to assist process optimization and upscale.

> 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
> Ethernet connectivity for integration with building alarm systems or monitoring software
> Intuitive touchscreen with user management capabilities and data/event log to trace back device performance
> Easily reach all your samples using the slide-out platform
> Glide-up door for convenient and effortless access
> Double- or triple-stack the Innova S44i to increase capacity without sacrificing more valuable lab space
> Up to 156 % more flask capacity than the previous Innova 44 with a smaller footprint
> High flask capacity and up to 35 kg weight load on platform for high throughput demands.
> Chamber accommodates up to 5 L Erlenmeyer flasks and a large variety of racks, plates, and vessels for flexibility

Ordering information

Description		Order no.
Innova® S44i, 230 V/50 Hz, orbit diameter 2.5 cm (1 in), incubated		S44I 300.001
Innova® S44i, 230 V/50 Hz, orbit diameter 2.5 cm (1 in), refrigerated		S44I 310.001
Innova® S44i, 230 V/50 Hz, orbit diameter 2.5 cm (1 in), refrigerated, photosynthetic LED lights		S44I 311.001
Innova® S44i, 230 V/50 Hz, orbit diameter 5.1 cm (2 in), incubated		S44I 320.001
Innova® S44i, 230 V/50 Hz, orbit diameter 5.1 cm (2 in), refrigerated		S44I 330.001
Innova® S44i, 230 V/50 Hz, orbit diameter 5.1 cm (2 in), refrigerated, photosynthetic LED lights		S44I 331.001
Platforms for Innova® S44i, aluminum		
Universal platform (for capacities, see page 30)		S44I 040.001
125 mL Erlenmeyer flask dedicated platform	86 clamps	S44I 040.002
250 mL Erlenmeyer flask dedicated platform	53 clamps	S44I 040.003
500 mL Erlenmeyer flask dedicated platform	39 clamps	S44I 040.004
1 L Erlenmeyer flask dedicated platform	23 clamps	S44I 040.005
2 L Erlenmeyer flask dedicated platform	15 clamps	S44I 040.006
10.5 cm (4.1 in) positioning base		S44I 041.001
30.7 cm (12.1 in) positioning base		S44I 041.002
Stacking kit, double stack of Innova® S44i		S44I 041.005
Stacking kit, Innova® S44i to Innova® 44/44R [1]		S44I 041.006
Stacking kit, triple stack of Innova® S44i		S44I 041.003
Static incubation shelf		S44I 042.001
Darkening window shade		S44I 042.002

[1]Maximum agitation speed of Innova® S44i reduced to 300 rpm when stacked on one Innova® 44/44R and 250 rpm when triple stacked

Save space and grow more with a double- or triple-stacked setup

Conveniently reach all areas of the shaker platform and chamber using the glide-up door, slide-out tray, and our universal and dedicated platforms, along with a vast portfolio of accessories, provide over 10,000 unique configurations

Easily update and retrofit your lab by stacking a new Innova S44i on top of your existing Innova 44/44R incubator shaker. Expand your shaking capacity and application potential without expanding the footprint or changing your layout.

Innova® 44/44R

Large, clear glass viewing window provides full visibility of the entire chamber

Space-saving door glides up and out of your way for easy access to all samples

Programmable controller automates making multiple setpoint changes

Incubated, refrigerated and stackable up to three high

The Innova 44 and Innova 44R stackable incubator shakers both feature the Eppendorf triple-eccentric counterbalanced drive and are a time-proven enabler for many scientists around the world. These incubator shakers provide years of dependable operation. The cast iron support and counter balanced drive is specifically designed to enable high speed applications and heavy workloads. Innova 44/44R incubator shakers provide broad temperature capabilities and options for culturing a wide variety of organisms. The height clearance and platform size allows for multiple cultures in typical 5 L flasks.

> Stackable up to three units for maximum space savings
> Triple-eccentric counterbalanced drive in cast iron housing provides vibration and trouble free operation for years
> Programmable Innova controls automatically changes temperature, speed and optional photosynthetic lights at timed intervals
> Versatile accessory platform accommodates flasks up to 5 L
> Shaking speed of 25 – 400 rpm provides versatility for culturing a wide variety of cell types
> Slide-out platform mechanism provides easy and effortless access to flasks located in the front and back of the shaker
> Built in spill pan protects the drive mechanism from accidental spills, is drainable for easy cleaning, and allows the use as a water reservoir to reduce sample evaporation
> Pull-out service module allows access to all electronic and heating/cooling components, without having to unstack the units

Ordering information

Description		Order no.
New Brunswick™ Innova® 44		
230 V/50 Hz, orbit diameter 2.5 cm (1 in)		M1282-0002
230 V/50 Hz, orbit diameter 5.1 cm (2 in)		M1282-0012
New Brunswick™ Innova® 44R		
230 V/50 Hz, orbit diameter 2.5 cm (1 in)		M1282-0006
230 V/50 Hz, orbit diameter 5.1 cm (2 in)		M1282-0016
Photosynthetic light bank, for Innova® 44R only		M1282-9922
12-port gassing manifold, for Innova® 44R only		M1282-0291
Humidity monitor, for Innova® 44R only		M1282-5011
UV germicidal light, for Innova® 44R only		M1282-9921
Platforms for Innova® 44/44R, aluminum		
Universal platform (for capacities, see page 30)		M1282-9904
125 mL Erlenmeyer flask dedicated platform	60 clamps	M1282-9905
250 mL Erlenmeyer flask dedicated platform	40 clamps	M1282-9906
500 mL Erlenmeyer flask dedicated platform	24 clamps	M1282-9907
1 L Erlenmeyer flask dedicated platform	15 clamps	M1282-9908
2 L Erlenmeyer flask dedicated platform	12 clamps	M1282-9909
Sticky pad platform (sticky pads sold separately)		M1282-9913
Heavy duty 0.95 cm-thick aluminum plate platform for Innova® 44/44R only, 76 × 46 cm, not interchangeable with other 76 × 46 cm platforms. Heavy-duty platforms are recommended for shaking full loads of flasks, 1 L and larger, containing more than 20 % volume or with baffles		
Universal platform (for capacities, see page 30)		M1282-9915
1 L Erlenmeyer flask dedicated platform	15 clamps	M1282-9925
2 L Erlenmeyer flask dedicated platform	12 clamps	M1282-9926
Base riser, increases the height of the shaker for easier access, for Innova® 44/44R (Feet can only be used in single devices. A base is required in stacked configurations. A triple stack must be used with a short base.)		
10.2 cm, short		M1282-0600
30.5 cm, medium		M1282-0800
40.6 cm, tall		M1282-0700
Stacking kit, for stacking one additional 44 or 44R		M1282-0500

Grow more in the same footprint—Innova 44 models are stackable up to three units for maximum space savings

The combination of the pull-out platform and glide-up door allows you to easily access all your samples and quickly change platforms

We thought of everything, from turn-key service for delivery and installation to a front-accessed electronics module to enable servicing without the need for moving or unstacking the units

Innova® 43/43R

Top-mounted controls and display make it easy to view and set parameters

Ergonomic design; easy-open lid, assisted by a foot pedal release, provides hands-free operation

Easy mobility with integrated wheels

Console incubator shaker for flasks up to 6 liters

The Innova 43 and Innova 43R console incubator shakers provide years of dependable operation. A pedal operated lid means you don't have to worry about how you'll open the shaker with your hands full. Once your samples are in the shaker, you can keep an eye on them thanks to the viewing window in the sidewall. Innova 43 incubator shakers and Innova 43R with added refrigeration are the perfect choice for handling large quantities or large volumes of culture in vessels up to 6 L in volume, and come with a controller to program and automate parameter changes on the basis of time.

> Console style, top-opening incubator shaker with triple-eccentric drive provides large capacity shaking for flasks up to 6 L
> Programmable Innova controls automatically changes temperature, speed and optional photosynthetic lights at timed intervals
> Top mounted controls and display for easy, ergonomic viewing and setting
> Foot pedal release with easy opening lid provides hands free operation
> Large platform size provides increased flexibility with the number and size of cultures
> Built in spill pan with pluggable drain captures accidental spills and can be filled with water to reduce sample evaporation
> Spill cover, above the drive, additionally protects electronics and mechanical components
> Optional germicidal UV light in the airflow path outside the chamber
> Optional gassing manifold, humidity probe, programmable photosynthetic light bank and remote alarm contact are also available

Ordering information

Description		Order no.
New Brunswick™ Innova® 43		
230 V/50 Hz, orbit diameter 2.5 cm (1 in)		M1320-0002
230 V/50 Hz, orbit diameter 5.1 cm (2 in)		M1320-0012
New Brunswick™ Innova® 43R		
230 V/50 Hz, orbit diameter 2.5 cm (1 in)		M1320-0006
230 V/50 Hz, orbit diameter 5.1 cm (2 in)		M1320-0016
Photosynthetic light bank, for Innova® 43R only		M1320-0300
UV germicidal light, for Innova® 43R only		M1320-0400
12-port gassing manifold, for Innova® 43R only		M1320-0500
Humidity monitor, for Innova® 43R only		M1320-0600
Remote alarm		M1320-8029
Platforms for Innova® 43/43R, aluminum		
Universal platform (for capacities, see page 30)		M1250-9920
50 mL Erlenmeyer flask dedicated platform	108 clamps	M1191-9908
125 mL Erlenmeyer flask dedicated platform	60 clamps	M1191-9909
250 mL Erlenmeyer flask dedicated platform	40 clamps	M1191-9910
500 mL Erlenmeyer flask dedicated platform	24 clamps	M1191-9911
1 L Erlenmeyer flask dedicated platform	15 clamps	AG-1
2 L Erlenmeyer flask dedicated platform	12 clamps	AG-2
Sticky pad platform (sticky pads sold separately)		M1250-9904
Utility tray, with non-skid rubber surface		AG-00

Easily set and monitor your setpoints with the easy-to-read, top-mounted display

Ergonomic design; easy-open lid, assisted by a foot pedal release, provides hands-free operation

Innova® 42/42R

An adjustable-height and removable stationary shelf is included; additional shelves optional

Large, triple-pane, insulated viewing window and an internal light provide a clear view of the chamber contents

Ergonomically-positioned, top-mounted controls make these shakers easy to use on or under the bench or double-stacked on the floor

Stackable, incubated, refrigerated shaker with stationary shelf

If versatility is what you need, look no further. The Innova 42 and Innova 42R incubator shaker is available with a large list of optional extras, allowing you to customise your shaker to your application. Furthermore, the Innova 42/42R can be stacked in pairs or tucked under a standard lab bench - either way, you'll save space. Static incubation is included via one static shelf – which can be used simultaneously whilst the Innova 42/42R is shaking other cultures. It's hard to believe that a typical 6 L flask can be used in this small shaker.

> Programmable Innova controls automatically changes temperature, speed and optional photosynthetic lights at timed intervals
> Large viewing window and internal light provides easy viewing of samples without the need to open the door
> Triple-eccentric counterbalanced drive in cast iron housing provides vibration and trouble free operation for years
> Accommodates flasks up to 6 L (4 L with shelf or photosynthetic light bank installed))
> Uniform and precise temperature control provide the optimum environment for all samples
> Built in spill pan protects the drive mechanism from accidental spills, is drainable for easy cleaning, and allows the use as a water reservoir to reduce sample evaporation

Ordering information

Description		Order no.
New Brunswick™ Innova® 42		
230 V/50 Hz, orbit diameter 1.9 cm (3/4 in)		M1335-0002
230 V/50 Hz, orbit diameter 2.5 cm (1 in)		M1335-0012
New Brunswick™ Innova® 42R		
230 V/50 Hz, orbit diameter 1.9 cm (3/4 in)		M1335-0006
230 V/50 Hz, orbit diameter 2.5 cm (1 in)		M1335-0016
Photosynthetic light bank, for Innova® 42R only		M1335-0300
UV germicidal light, for Innova® 42R only		M1335-0400
Humidity Monitor, for Innova® 42R only		M1335-0500
12-port gassing manifold, for Innova® 42R only		M1335-0600
Remote alarm		M1320-8029
Platforms for Innova® 42/42R, phenolic resin unless otherwise noted		
Universal platform, aluminum (for capacities, see page 30)		M1250-9902
50 mL Erlenmeyer flask dedicated platform	64 clamps	M1194-9903
125 mL Erlenmeyer flask dedicated platform	34 clamps	M1194-9904
250 mL Erlenmeyer flask dedicated platform	25 clamps	M1194-9905
500 mL Erlenmeyer flask dedicated platform	16 clamps	M1194-9906
1 L Erlenmeyer flask dedicated platform	9 clamps	M1194-9907
2 L Erlenmeyer flask dedicated platform	5 clamps	M1194-9908
Sticky pad platform (sticky pads sold separately)		M1250-9903
Quick-change platform kit, enables platform attachment without tools		M1192-9901
Culture drawer, prevents plates from drying		M1335-0501
Utility carrier, holds racks and vessels between rubber-cushioned cross bars		M1194-9909
Rod kit, for utility carrier (one additional rod)		M1194-9923
Stacking kit, for stacking Innova® 42/42R shakers		M1335-0800
Utility tray, with non-skid rubber surface		M1194-9910
Additional perforated shelf and brackets, for Innova® 42/42R		M1335-0080

Use on or under the bench, or double stacked to grow more samples in the same footprint

Add the optional culture drawer to help prevent sample desiccation in static cultures

Innova® 40/40R

Clear lid provides excellent visibility. Lifts out of the way for easy access to samples

Compact and convenient benchtop model for flasks up to 3 liters

The Innova 40 and Innova 40R incubator and refrigerated small-scale benchtop shakers are great for small scale projects, or for those looking to start small and grow. The samples are in clear view at all times and there are options for a drip pan. The user interface mirrors the benefits of the larger units and comes as standard with multi-parameter programmable steps. The drive unit is the proven and tested triple-eccentric counterbalanced drive – dependable as always. With this being the smallest benchtop incubator shaker we provide, this is the ideal starting point – with a view to grow.

> Triple-eccentric counterbalanced drive in cast iron housing provides vibration and trouble free operation for years
> Programmable Innova controls—automatically changes temperature and speed at programmed and timed intervals
> Clear cover allows easy viewing of the cultures and lifts easily to access all samples
> Versatile accessory platform (sold separately) accommodates flasks, test tube racks, and microplate holders

Ordering information

Description		Order no.
New Brunswick™ Innova® 40		
230 V/50 Hz, orbit diameter 1.9 cm (3/4 in)		M1299-0082
230 V/50 Hz, orbit diameter 2.5 cm (1 in)		M1299-0092
New Brunswick™ Innova® 40R		
230 V/50 Hz, orbit diameter 1.9 cm (3/4 in)		M1299-0086
230 V/50 Hz, orbit diameter 2.5 cm (1 in)		M1299-0096
Remote alarm		M1320-8029
Drip pan, for universal platform M1250-9902		M1250-9906
Platforms for Innova® 40/40R, phenolic resin unless otherwise noted		
Universal platform, Aluminum (for capacities, see page 30)		M1250-9902
50 mL Erlenmeyer flask dedicated platform	64 clamps	M1194-9903
125 mL Erlenmeyer flask dedicated platform	34 clamps	M1194-9904
250 mL Erlenmeyer flask dedicated platform	25 clamps	M1194-9905
500 mL Erlenmeyer flask dedicated platform	16 clamps	M1194-9906
1 L Erlenmeyer flask dedicated platform	9 clamps	M1194-9907
Sticky pad platform (sticky pads sold separately)		M1250-9903
Quick-change platform kit, enables platform attachment without tools		M1192-9901
Utility carrier, holds racks and vessels between rubber-cushioned cross bars		M1194-9909
Rod kit, for utility carrier (one additional rod)		M1194-9923
Utility tray, with non-skid rubber surface		M1194-9910

Hydraulic arms make it easy to raise and keep the lid open, leaving hands free for sample handling

Large, easy to read display lets you easily see your shaker from across the room or in the dark

Open-Air Shakers

Model	Innova® 2000	Innova® 2050	Innova® 2100
Dimensions (W × D × H)	35.5 × 37.0 × 14.6 cm (14.0 × 14.5 × 5.8 in)	43.0 × 37.0 × 14.6 cm (17.0 × 14.5 × 5.8 in)	48.0 × 55.5 × 16.3 cm (19.0 × 21.9 × 6.4 in)
Weight w/o accessories	15 kg (33 lb)	16 kg (35 lb)	34 kg (75 lb)
Audible and visual alarms	yes	yes	yes
Drive mechanism	Triple-eccentric counterbalanced drive	Triple-eccentric counterbalanced drive	Triple-eccentric counterbalanced drive
Placement/orientation	> Benchtop	> Benchtop	> Benchtop
Motor type	Solid state, DC brushless motor	Solid state, DC brushless motor	Solid state, DC brushless motor
Orbit	1.9 cm (0.75 in)	1.9 cm (0.75 in)	1.9 cm (0.75 in)
Platform size	33 × 28 cm (13 × 11 in)	41 × 31 cm (16 × 12 in)	46 × 46 cm (18 × 18 in)
Speed range	25 – 500 rpm	25 – 500 rpm	25 – 500 rpm
Speed control	±1 rpm	±1 rpm	±1 rpm
Timer	0.1 – 99.9 h	0.1 – 99.9 h	0.1 – 99.9 h

Universal Platform Clamp Capacities			
10 mL Erlenmeyer flasks	60	86	109
25 mL Erlenmeyer flasks	20	32	64
50 mL Erlenmeyer flasks	15	32	45
125 mL Erlenmeyer flasks	11	16	21
250 mL Erlenmeyer flasks	6	10	18
500 mL Erlenmeyer flasks	4	8	14
1 L Erlenmeyer flasks	-	-	8
2 L Erlenmeyer flasks	-	-	5
2 L Lauber Thompson	-	-	5
2.8 L Fernbach flasks	-	-	4
3 L Erlenmeyer flasks	-	-	4
4 L Erlenmeyer flasks	-	-	4
5 L Erlenmeyer flasks	-	-	4
6 L Erlenmeyer flasks	-	-	2
Microplate rack (stack)	-	-	8
Microplate rack (layer)	-	-	2
Test tube rack, small	3	4	5
Test tube rack, medium	-	3	5
Test tube rack, large	-	-	4

Innova® 2150	**Innova® 2300**	**Innova® 2350**
60.1 × 59.1 × 16.3 cm (24.0 × 23.3 × 6.4 in)	76.2 × 56.6 × 16.3 cm (30.0 × 22.3 × 6.4 in)	91.4 × 61.0 × 16.3 cm (36.0 × 24.0 × 6.4 in)
36 kg (80 lb)	48 kg (105 lb)	52 kg (115 lb)
yes	yes	yes
Triple-eccentric counterbalanced drive	Triple-eccentric counterbalanced drive	Triple-eccentric counterbalanced drive
> Benchtop	> Benchtop	> Benchtop
Solid state, DC brushless motor	Solid state, DC brushless motor	Solid state, DC brushless motor
1.9 cm (0.75 in)	2.5 or 5.1 cm (1 or 2 in)	2.5 or 5.1 cm (1 or 2 in)
61 × 46 cm (24 × 18 in)	76 × 46 cm (30 × 18 in)	91 × 61 cm (36 × 24 in)
25 – 500 rpm	25 – 500 rpm	25 – 500 rpm
±1 rpm	±1 rpm	±1 rpm
0.1 – 99.9 h	0.1 – 99.9 h	0.1 – 99.9 h

-	183	-
-	92	-
63	92	-
35	39	75
24	30	50
20	18	30
12	12	24
6	8	15
6	6	12
5	6	12
5	6	11
5	6	11
4	6	8
3	4	7
16	16	16
4	4	4
9	9	9
9	9	9
7	7	7

Open-Air Shakers

For shaking in ambient conditions, on the bench, or in a warm or cold room, Innova Open Air Shakers are the instrument of choice. These shakers are designed to be used 24/7 and just keep going. Dependable operation is due in large part to the Eppendorf triple-eccentric counterbalanced drive. Eppendorf offers a broad-based cast-iron support mechanism properly sized to each shaker and specifically designed to support high-speed applications and heavy workloads. Innova Open Air shakers are offered in 6 different sizes offering reliable, continuous-duty shaking of test tubes and flasks up to 6 liters.

1. Speed controlled and displayed in increments of 1 rpm

2. Includes audible and visual alarms, continuous or timed (0.1 - 99.9 h) operation with automatic shut off at the end of the study

3. Enclosed electronics and mechanical components prevent internal damage from accidental spills

4. Versatile universal and dedicated platforms (sold separately) available for application flexibility

Ordering information

Description		Order no.
New Brunswick™ Innova® 2000, 220/230 V/50/60 Hz, orbit diameter 1.9 cm (0.75 in)		M1190-0002
Platforms for Innova® 2000, stainless steel		
Universal platform		M1001-0240
25 mL Erlenmeyer flask dedicated platform	32 clamps	M1190-9919
50 mL Erlenmeyer flask dedicated platform	20 clamps	M1190-9915
125 mL Erlenmeyer flask dedicated platform	12 clamps	M1190-9916
250 mL Erlenmeyer flask dedicated platform	8 clamps	M1190-9917
500 mL Erlenmeyer flask dedicated platform	6 clamps	M1190-9918
Sticky pad platform (sticky pads sold separately)		M1190-0300
Utility carrier, holds glassware between rubber-cushioned cross bars		AG2-UT
Utility tray, with non-skid rubber surface		AG2-00
Capacity upgrade kit, to convert a Model 2000 to a Model 2050		M1190-9910
Temperature and speed monitoring kit, for recording on an external chart recorder		M1190-9909

Ordering information

Description		Order no.
New Brunswick™ Innova® 2050, 220/230 V/50/60 Hz, orbit diameter 1.9 cm (0.75 in)		M1190-0012
Platforms for Innova® 2050, 40.6 × 30.5 cm, stainless steel		
Universal platform		M1190-9900
25 mL Erlenmeyer flask dedicated platform	48 clamps	M1190-9902
50 mL Erlenmeyer flask dedicated platform	35 clamps	M1190-9903
125 mL Erlenmeyer flask dedicated platform	20 clamps	M1190-9904
250 mL Erlenmeyer flask dedicated platform	12 clamps	M1190-9905
500 mL Erlenmeyer flask dedicated platform	8 clamps	M1190-9906
1 L Erlenmeyer flask dedicated platform	6 clamps	M1190-9911
Utility carrier, holds glassware between rubber-cushioned cross bars		M1190-9907
Utility tray, with non-skid rubber surface		M1190-9908
Temperature and speed monitoring kit, for recording on an external chart recorder		M1190-9909

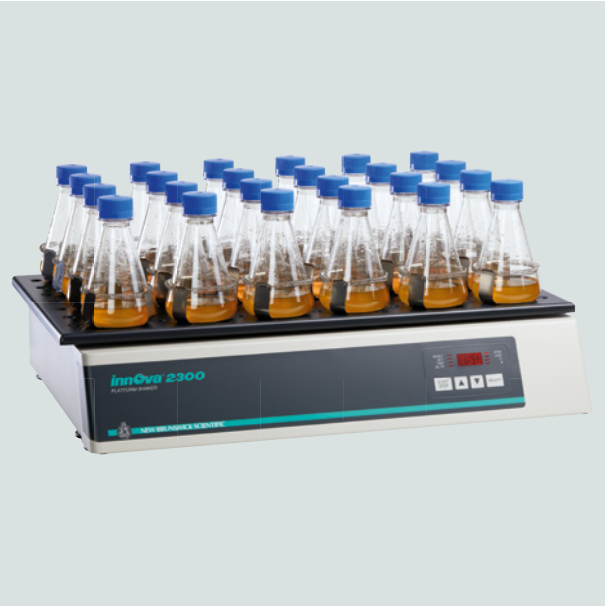
Innova® 2100/2150

Ordering information

Description		Order no.
New Brunswick™ Innova® 2100, 220/230 V/50/60 Hz, orbit diameter 1.9 cm (0.75 in)		M1194-0002
Drip pan, for universal platform M1250-9902		M1250-9906
Platforms for Innova® 2100, phenolic resin unless otherwise noted		
Universal platform, Aluminum		M1250-9902
50 mL Erlenmeyer flask dedicated platform	64 clamps	M1194-9903
125 mL Erlenmeyer flask dedicated platform	34 clamps	M1194-9904
250 mL Erlenmeyer flask dedicated platform	25 clamps	M1194-9905
500 mL Erlenmeyer flask dedicated platform	16 clamps	M1194-9906
1 L Erlenmeyer flask dedicated platform	9 clamps	M1194-9907
Sticky pad platform (sticky pads sold separately)		M1250-9903
Quick-change platform kit, enables platform attachment without tools		M1192-9901
Utility carrier, holds racks and vessels between rubber-cushioned cross bars		M1194-9909
Rod kit, for utility carrier (one additional rod)		M1194-9923
Utility tray, with non-skid rubber surface		M1194-9910
Capacity upgrade kit, to convert a Model 2100 to a Model 2150		M1194-9926
Temperature and speed monitoring kit, for recording on an external chart recorder		M1194-9924

Ordering information

Description		Order no.
New Brunswick™ Innova® 2150, 220/230 V/50/60 Hz, orbit diameter 1.9 cm (0.75 in)		M1194-0012
Platforms for Innova® 2150, phenolic resin unless otherwise noted		
Universal platform		M1194-9912
50 mL Erlenmeyer flask dedicated platform	80 clamps	M1194-9915
125 mL Erlenmeyer flask dedicated platform	48 clamps	M1194-9916
250 mL Erlenmeyer flask dedicated platform	35 clamps	M1194-9917
500 mL Erlenmeyer flask dedicated platform	20 clamps	M1194-9918
1 L Erlenmeyer flask dedicated platform	12 clamps	M1194-9919
Utility carrier, holds glassware between rubber-cushioned cross bars		M1194-9921
Rod kit, for utility carrier (one additional rod)		M1194-9925
Utility tray, with non-skid rubber surface		M1194-9922
Quick-change platform kit, enables platform attachment without tools		M1194-9927
Temperature and speed monitoring kit, for recording on an external chart recorder		M1194-9924



Ordering information

Description		Order no.
New Brunswick™ Innova® 2300		
220/230 V/50/60 Hz, orbit diameter 2.5 cm (1 in)		M1191-0002
220/230 V/50/60 Hz, orbit diameter 5.1 cm (2 in)		M1191-0022
Drip pan, to catch accidental spills, for use with universal platform M1250-9920		M1250-9921
Platforms for Innova® 2300, aluminum		
Universal platform		M1250-9920
50 mL Erlenmeyer flask dedicated platform	108 clamps	M1191-9908
125 mL Erlenmeyer flask dedicated platform	60 clamps	M1191-9909
250 mL Erlenmeyer flask dedicated platform	40 clamps	M1191-9910
500 mL Erlenmeyer flask dedicated platform	24 clamps	M1191-9911
1 L Erlenmeyer flask dedicated platform	15 clamps	AG-1
2 L Erlenmeyer flask dedicated platform	12 clamps	AG-2
Sticky pad platform (sticky pads sold separately)		M1250-9904
Utility tray, with non-skid rubber surface		AG-00
Quick-change platform kit, enables platform attachment without tools		M1191-9904
Capacity upgrade kit, to convert a Model 2300 to a Model 2350		M1191-9905
Temperature and speed monitoring kit, for recording on an external chart recorder		M1194-9924

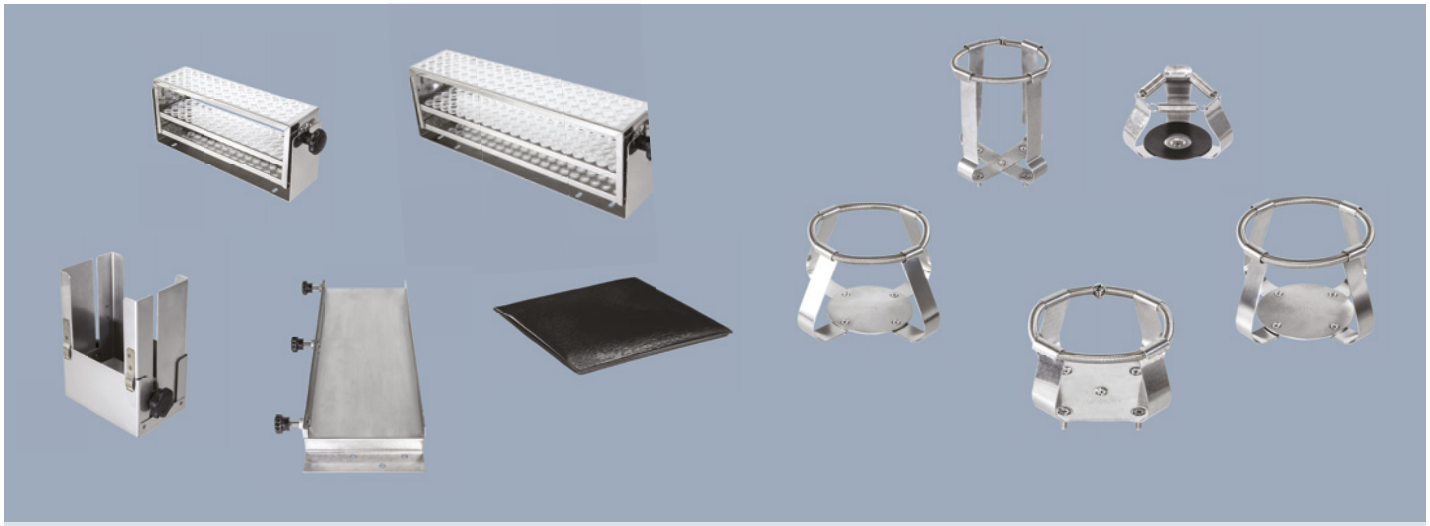
Ordering information

Description		Order no.
New Brunswick™ Innova® 2350		
220/230 V/50/60 Hz, orbit diameter 2.5 cm (1 in)		M1191-0012
220/230 V/50/60 Hz, orbit diameter 5.1 cm (2 in)		M1191-0032
Platforms for Innova® 2350, marine plywood unless otherwise noted		
Universal platform, aluminum		PTL-393
125 mL Erlenmeyer flask dedicated platform	96 clamps	M1191-9912
250 mL Erlenmeyer flask dedicated platform	70 clamps	M1191-9913
500 mL Erlenmeyer flask dedicated platform	40 clamps	M1191-9914
Temperature and speed monitoring kit, for recording on an external chart recorder		M1194-9924

Universal Platforms and Clamp Capacities for Incubator Shakers

	Innova® 40/40R	Innova® 42/42R	Innova® 43/43R	Innova® 44/44R	Innova® S44i
Platform order no.	M1250-9902	M1250-9902	M1250-9920	M1282-9904	S44I 040.001
10 mL Erlenmeyer flasks	109	109	183	187	238
25 mL Erlenmeyer flasks	64	64	92	93	238
50 mL Erlenmeyer flasks	45	45	92	91	130
125 mL Erlenmeyer flasks	21	21	39	39	81
250 mL Erlenmeyer flasks	18	18	30	30	49
500 mL Erlenmeyer flasks	14	14	18	24	36
1 L Erlenmeyer flasks	8	8	12	14	20
2 L Erlenmeyer flasks	5	5	8	8	13
2 L Lauber Thompson	5	5	8	8	15
2.8 L Fernbach flasks	4	4	6	6	8
3 L Erlenmeyer flasks	4	4	6	6	8
4 L Erlenmeyer flasks	-	4	6	6	8
5 L Erlenmeyer flasks	-	4*	6*	6*	6
6 L Erlenmeyer flasks	-	2*	4*	-	-
Microplate rack (stack)	8	8	16	16	20
Microplate rack (layer)	2	2	4	4	4
Test tube rack, small	5	5	9	9	12
Test tube rack, medium	5	5	9	9	10
Test tube rack, large	4	4	7	7	8
Platform size	46 × 46 cm (18 × 18 in)	46 × 46 cm (18 × 18 in)	76 × 46 cm (30 × 18 in)	76 × 46 cm (30 × 18 in)	76 x 62 cm (30 x 24 in)

*Max. flask size is 4 L with light bank or shelf installed



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

Flask Clamp and Accessory Ordering Information

Description	Order no.
Clamps	
10 mL Erlenmeyer Clamp	ACE-10S
25 mL Erlenmeyer Clamp	M1190-9004
50 mL Erlenmeyer Clamp with spring retainer	M1190-9000
125 mL Erlenmeyer Clamp with spring retainer	M1190-9001
250 mL Erlenmeyer Clamp with spring retainer	M1190-9002
500 mL Erlenmeyer Clamp with spring retainer	M1190-9003
1 L Erlenmeyer Clamp with spring retainer	ACE-1000S
2 L Erlenmeyer Clamp with spring retainer	ACE-2000S
500 mL Media Bottle Clamp with spring retainer	ACSB-500S
1 L Media Bottle Clamp with spring retainer	ACSB-1000S
2.8 L Fernbach Flask Clamp with spring retainer	ACFE-2800S
3 L Erlenmeyer Clamp with spring retainer	ACE-3000S
4 L Erlenmeyer Clamp with spring retainer	ACE-4000S
5 L Erlenmeyer Clamp with spring retainer	ACE-5000S
6 L Erlenmeyer Clamp with spring retainer	ACE-6000S
Angled Test Tube Rack Holder, for user-supplied test tube racks and microplates	TTR-210
Spacer Bar for TTR-210	TTR-215
Microplate rack, for single layer of five plates	TTR-221
Microplate rack, stack three deepwell or nine standard plates	M1289-0700
Sticky Pad Adapter Kit	M1250-9504
Sticky Tape, 2,300 × 3.8 cm (75 ft × 1.5 in) roll	M1250-9600
Sticky Pad, 20 × 20 cm (8 × 8 in)	M1250-9700
Drip pan, for universal platform M1250-9902	M1250-9906
Drip pan, to catch accidental spills, for use with universal platform M1250-9920	M1250-9921

Test Tube Racks Ordering Information

Large Racks			Medium Racks			Small Racks		
Order no.	**Diameter**	**Tubes/Rack**	**Order no.**	**Diameter**	**Tubes/Rack**	**Order no.**	**Diameter**	**Tubes/Rack**
M1289-0100	8 - 11 mm	80	M1289-0010	8 - 11 mm	60	M1289-0001	8 - 11 mm	48
M1289-0200	12 - 15 mm	60	M1289-0020	12 - 15 mm	44	M1289-0002	12 - 15 mm	34
M1289-0300	15 - 18 mm	42	M1289-0030	15 - 18 mm	31	M1289-0003	15 - 18 mm	24
M1289-0400	18 - 21 mm	30	M1289-0040	18 - 21 mm	23	M1289-0004	18 - 21 mm	18
M1289-0500	22 - 26 mm	22	M1289-0050	22 - 26 mm	16	M1289-0005	22 - 26 mm	13
M1289-0600	26 - 30 mm	20	M1289-0060	26 - 30 mm	16	M1289-0006	26 - 30 mm	12

»Eppendorf Shaker Solutions.«

Learn more about our extensive shaker portfolio, view the latest videos, interact with an Innova S44i incubator shaker in 360°, and much more on our website. You can also view and order our wide range of accessories, as well as see how Eppendorf can provide all the tools and equipment you need for every step of your lab's valuable work.

Whether you are just starting up your first lab or scaling up your industrial operations, Eppendorf has the life science tools you need.

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