

eppendorf



# Perfect Match

New Brunswick™ Innova® biological laboratory shakers for all your culture needs

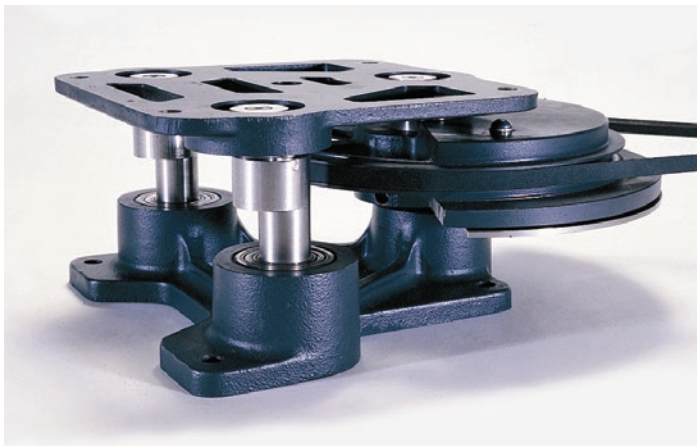
# Get the Innova<sup>®</sup> advantage

Innova<sup>®</sup> Shakers — The lab standard for cell growth in shake flasks and tubes

For over 60 years, New Brunswick Shakers have been synonymous with quality construction and durability. They have been used in more labs the world over than any other shaker and our top-of-the line Innova models continue to be the market leaders.

- > Innovative design and unparalleled fabrication provide worry-free operation, often over decades of continuous use
- > “Set it and forget it” programming in our incubated

- models enables you to store and recall multi-step, multiple parameter programs for unmatched convenience, automated operation and reproducible results
- > Our comprehensive warranty is backed by a support organization known for top-rate customer care
- > We offer the largest selection of shakers in the industry to meet a diverse range of culture requirements



Often imitated but never duplicated, New Brunswick shakers use the most stable triple-eccentric counterbalanced drive in the industry

## Built to last

Heavy-duty construction allows us to guarantee that our shakers will perform to your specifications, even when fully loaded and operating at top speed.

- > Dependable operation is due in large part to the Eppendorf triple-eccentric counterbalanced drive
- > Components are fabricated to exacting specifications; drive shafts are machined to tolerances of 5 micrometers, ensuring stable, vibration-free operation
- > Drive mechanisms properly sized to each shaker, and specifically designed to support high-speed applications and heavy workloads
- > Made of the highest-quality materials, with superior design and precision fabrication, we guarantee our shakers will provide worry-free operation for many years to come



New Brunswick S41 CO<sub>2</sub> Incubator Shakers, page 6



Innova 40 Incubator Shakers & 40R with added refrigeration, page 8



Innova 42 Incubator Shakers & 42R with added refrigeration, page 10



Innova 43 Incubator Shakers & 43R with added refrigeration, page 12



Open air shakers (above, see pages 18 - 21); or temperature-controlled shakers (right), Innova 42 (page 8) and triple-stacked Innova 44 (page 12).



### Versatile, dependable, and easy to use

- > Wide speed range, with options for incubation, humidity monitoring, remote alarm, refrigeration, photosynthetic lighting, UV germicidal lighting and in-flask gassing, enables growth of virtually any cell type
- > Exceptionally accurate microprocessor-controlled temperature and speed ensure consistent results
- > Programmable controller, included on all incubated and refrigerated models, automates changes to setpoints, ramps temperature and speed up/down, and turns optional photosynthetic and UV germicidal lights on/off

- > Timed studies with automated agitation shut-off
- > End-of-study alarm (and status light) can be muted for continuous operation
- > Download data to your PC — all incubated models (except Innova 3100) allow communications with standard laboratory software such as the optional New Brunswick BioCommand® SFI
- > Unmatched attention to manufacturing details makes New Brunswick shakers exceptionally quiet for a more favorable work environment
- > Low maintenance, long life — cool-running, brushless motors never require lubrication



Innova 44 Incubator Shakers & 44R with added refrigeration, page 14



Innova 3100 Water Bath Shakers, page 16



Innova 2000 to 2300 Series Open Air Shakers - Six Models, page 18



Innova 5000 Three-Tier, Large-Capacity Open Air Shaker, page 20

# Advanced controls & safety

User-friendly, advanced control provides accuracy and convenience

## Innova 40, 42, 43 and 44 series

- > **Programmable controller to automate changes to parameter setpoints on a timed basis.** Set and store up to 4 programs, each with up to 15 unique time-based steps. Automate temperature ramp up. Speed up, slow down or stop agitation on a timed basis.
- > **Temperature Offset Function** enables matching the temperature display to a reference point — temperature either in the flask or the chamber.

## New Brunswick S41i CO<sub>2</sub> Incubator Shaker

- > **The advanced and intuitive touch screen controls** not only provide a clear and accurate determination of the conditions your cells are exposed to but allows you to track performance over time as well as many additional features and functions.

## Open air models & Innova 3100 Water Bath

- > **Easy-to-use membrane keypad with LED display.** Set operating parameters and monitor current status and alarms. Speed controlled & displayed in increments of 1 rpm, temperature in 0.1 °C, running time in 0.1 hrs. Status lights indicate need for maintenance after 10,000 hours of operation and alarm mute.

## Safety is a top priority

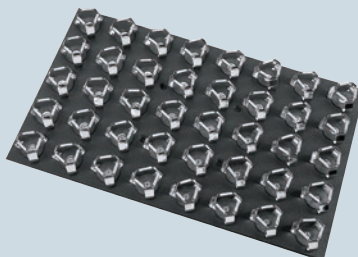
Safety feature	Function	Model
<b>Acceleration - Deceleration Circuit</b>	Prevents sudden starts and stops. Minimizes mechanical damage for longer shaker life and eliminates wetting of flask closures which can interfere with oxygen transfer	All
<b>Automatic Restart After Power Interrupt</b>	With non-volatile setpoint memory to keep studies running smoothly. Indicated by flashing display	All
<b>Unique Out-of-Balance Sensor</b>	Stops agitation motion when excess vibration is detected	42/42R, 44/44R & 5000
<b>Open Door/Lid Cut-Off Switch</b>	Stops shaker motion when chamber is open	All temperature-controlled models (except Innova 3100)
<b>Thermostat Fail-Safe</b>	Shuts off heaters if high limit is exceeded	All temperature-controlled models

Interchangeable accessories provide versatility



### Universal Platforms

Designed to let you add a variety of different-sized flasks, tubes and cultureware on a single platform. Accessory flask clamps, test tube racks and sticky tape (shown), as well as sticky pad and microplate holders are each sold separately



### Dedicated Platforms

Ideal when using a single flask size; these platforms provide maximum capacity and come with clamps pre-installed



### Utility Carriers

Secure cultureware between adjustable cushioned rods

## Shaker capacities using dedicated and universal platforms

Platform Type	Dedicated					Universal				
	40 / 40R	S41i	42 / 42R	43 / 43R	44 / 44R	40 / 40R	S41i	42 / 42R	43 / 43R	44 / 44R
Innova Model										
10 mL Erlenmeyer flasks	—	—	—	—	—	109	92	109	183	187
25 mL Erlenmeyer flasks	—	—	—	—	—	45	40	64	92	93
50 mL Erlenmeyer flasks	64	—	64	108	—	45	40	45	92	91
125 mL Erlenmeyer flasks	34	32	34	60	60	21	20	21	39	39
250 mL Erlenmeyer flasks	25	24	25	40	40	18	16	18	30	30
500 mL Erlenmeyer flasks	16	15	16	24	24	14	12	14	18	24
1 L Erlenmeyer flasks	9	11	9	15	15	8	10	8	12	14
2 L Erlenmeyer flasks	5	6	5	12	12	5	4	5	8	8
2.8 L Fernbach flasks	4	3	4	6	6	4	3	4	6	6
4 L Erlenmeyer flasks	—	3	4	6	6	—	3	4	6	6
5 L Erlenmeyer flasks	—	—	—	—	—	—	—	4	6 <sup>1</sup>	6 <sup>1,2</sup>
6 L Erlenmeyer flasks	—	—	—	4 <sup>1</sup>	—	—	—	2 <sup>1</sup>	4 <sup>1</sup>	—

Platform Type	Dedicated								Universal							
	3100	2000	2050	2100	2150	2300	2350	5000 <sup>6</sup>	3100	2000	2050	2100	2150	2300	2350	5000 <sup>6</sup>
Innova Model																
10 mL Erlenmeyer flasks	—	60	86	—	—	—	—	300	59	60	86	109	—	183	—	264
25 mL Erlenmeyer flasks	—	32	48	—	—	—	—	248	35	20	32	64	—	92	—	143
50 mL Erlenmeyer flasks	31	20	35	64	80	108	—	161	18	15	32	45	63	92	—	143
125 mL Erlenmeyer flasks	22	12	20	34	48	60	96	99	18	11	16	21	35	39	75	72
250 mL Erlenmeyer flasks	13	8	12	25	35	40	70	64	8	6	10	18	24	30	50	42
500 mL Erlenmeyer flasks	8	6	8	16	20	24	40	42	6	4	8	14	20	18	30	33
1 L Erlenmeyer flasks	6	—	6	9	12	15	—	23	4	—	—	8	12	12	24	17
2 L Erlenmeyer flasks	2	—	—	5	8	12	—	14 <sup>4</sup>	2	—	—	5	6	8	15	12 <sup>4</sup>
2.8 L Fernbach flasks	—	—	—	4	—	6	—	9 <sup>4</sup>	—	—	—	4	5	6	12	8 <sup>4</sup>
4 L Erlenmeyer flasks	—	—	—	—	—	6	—	9 <sup>5</sup>	—	—	—	4	5	6	10	8 <sup>5</sup>
5 L Erlenmeyer flasks	—	—	—	—	—	—	—	—	—	—	—	4	4	6	10	6 <sup>5</sup>
6 L Erlenmeyer flasks	—	—	—	—	—	4	6	8 <sup>5</sup>	—	—	—	2	3	4	8	6 <sup>5</sup>

For platform ordering info, see pages 22 - 23. Flask clamps, test tube racks and sticky tape/sticky pad for Universal Platforms are sold separately, see page 24.

<sup>1</sup> Maximum flask size is 4 L when using Photosynthetic Light Bank or Culture Drawer.

<sup>2</sup> Using Sticky Tape — less capacity with clamps.

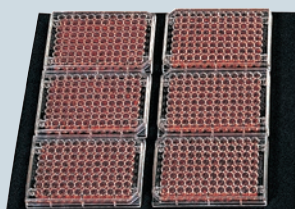
<sup>3</sup> Per platform - Maximum 6 platforms per shaker.

<sup>4</sup> When used on bottom tier, can only use front half of platform.

<sup>5</sup> For use on top tier only

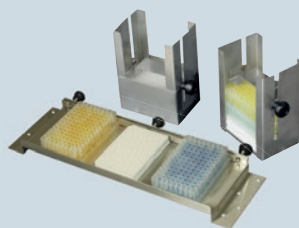
<sup>6</sup> Capacity per platform. Accepts up to 6 platforms.

See pages 22-24 for more accessory options



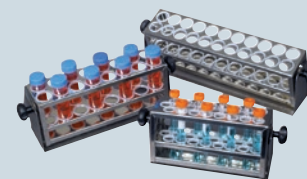
### Utility Trays

Provide a non-slip surface for low-speed applications



### Microplate Racks

Single layer racks hold five standard or deep well plates. Stacked plate racks hold up to nine standard or three deep well plates



### Test Tube Racks

Feature finger-tight knobs for quickly adjusting the angle or releasing the rack from the base plate for easy transport to the bench

# New Brunswick™ S41i CO<sub>2</sub> Incubator Shaker

The only CO<sub>2</sub> incubator with a New Brunswick™ shaker inside

For over a decade New Brunswick CO<sub>2</sub> incubators have provided researchers with a reliable, easy-to-use system for culturing cells. Continuing this tradition is the New Brunswick S41i CO<sub>2</sub> Incubator Shaker, designed specifically for non-adherent cell culture applications. The S41i combines precise temperature and CO<sub>2</sub> control with the best laboratory shaker available. The result: high cell yields and viability.

## The perfect combination

Like all New Brunswick CO<sub>2</sub> incubators, the S41i is loaded with advanced features. A unique six-sided direct-heating profile provides gentle convection circulation of the chamber atmosphere for exceptionally uniform temperature control.

But what makes the New Brunswick S41i really special is the built-in New Brunswick shaker. Combining our advanced CO<sub>2</sub> incubator and shaker technologies creates a highly stable environment for reliable cell growth. When it comes to high cell yields and viability, as well as overall reliability, you won't find a better solution.

## Advanced features are built in, not added on

- > Sealed inner/outer doors and advanced PI control maintain temperature accuracy and uniformity while minimizing costly gas consumption
- > High temperature disinfection (HTD) protects against bacterial contamination
- > Fanless design eliminates a common source of repeated contamination and expensive HEPA filters
- > Unique InfraRed (IR) CO<sub>2</sub> sensor offers specific measurement and accurate control of CO<sub>2</sub> levels
- > 25 mm access port for adding instrumentation or additional probes
- > Can be used on the floor, under counter or double stacked to save space; ideally sized for a cell culture lab
- > Includes removable stainless steel humidity pans



Glass inner door allows viewing of the cultures without compromising sample and environmental integrity



World famous triple eccentric drive provides stable, uniform and vibration free motion — connected to the shaking platform by four encapsulated rods, it's located below the chamber ensuring that heat generated by the drive does not affect the critical environment within the chamber



The advanced and intuitive touch screen not only provides a clear and accurate determination of the conditions your cells are exposed to but allows you to track performance over time as well as many additional features and functions

#### Specifications, New Brunswick S41i\*

Temperature	
Range	4 °C above ambient to 50 °C
Control	± 0.1 °C
Stability	± 0.1 °C at 37 °C
Uniformity (on platform)	± 0.25 °C at 37 °C (ambient temperature between 18 and 25 °C)
CO <sub>2</sub>	0.2 to 20%
Orbit	2.5 cm (1 in)
Shaking speed	25 - 400 rpm
Dimensions	
Platform	612 x 356 mm (24 x 14 in)
Overall	848 x 834 x 730 mm (33.4 x 32.8 x 28.7 in)
Net weight	159 kg (350 lb)

\* Specifications subject to change without notice.

#### Ordering information

Order no.	Description
S411-120-0100	New Brunswick™ S41i Incubator Shaker, 120 V, 60 Hz
S411-230-0100	New Brunswick™ S41i Incubator Shaker, 230 V, 50 Hz
<b>Options</b>	
P0628-6502	Stacking kit
P0628-6181	Additional perforated shelf
<b>Interchangeable platforms, 612 x 356 mm (24 x 14 in)</b>	
M1334-9920	Universal platform
M1334-9921	125 ml Dedicated platform
M1334-9922	250 ml Dedicated platform
M1334-9923	500 ml Dedicated platform
M1334-9924	1 L Dedicated platform
M1334-9925	2 L Dedicated platform
M1334-9926	2.8 L Dedicated platform
M1334-9927	4 L Dedicated platform

# Innova<sup>®</sup> 40 Incubator Shakers

Compact and convenient benchtop model for flasks up to 3 liters

The Innova 40 and 40R incubated benchtop shakers with the Eppendorf triple-eccentric counterbalanced drive provide years of dependable operation. The cast iron support and counter balanced drive is specifically designed to support high-speed applications and heavy workloads.

Innova 40 incubated shakers provide broad temperature capabilities for culturing a wide variety of organisms in flasks up to 3 L. Refrigeration module is built into the Innova 40R, or can be easily added to the Innova 40, at any time. Precise control, automated operation and high temperature capabilities makes the Innova 40 the clear choice.

- > Exceptionally quiet operation provides for a favorable work environment
- > 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 accommodates flasks, test tube racks, and Microplate holders<sup>2</sup>

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



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






### Specifications, Innova 40, 42, 43 & 44 Series Shakers<sup>1</sup>

Temperature System	
Control	Microprocessor-controlled in increments of 0.1 °C
Heaters	Low watt-density, resistance heaters with high-temperature safety thermostat cut-out
Refrigeration	Refrigerated "R" models only: Hermetically-sealed compressor uses CFC-free refrigerant
Calibration Offset	User-adjustable temperature display can be offset to match a "reference" temperature, either as measured in a flask or the average of a series of points measured in the chamber
Shaking	
Drive Mechanism	Triple-eccentric counterbalanced drive in cast-iron housing with 9 permanently lubricated ball bearings. Driven by solid-state brushless DC motor
Control	Microprocessor-controlled in increments $\pm 1$ rpm
Alarms, audible & visible	
	Indicate when speed deviates more than 5 rpm or temperature more than 1 °C from setpoint, and when program or time has finished. Alarm may be muted
Safety, mechanical & electronic	
	Acceleration circuit prevents sudden starts and stops. Sensor shuts off temperature when high temperature limit is exceeded

Timer & Parameter Control	
4 Modes	<ul style="list-style-type: none"> <li>• Speed and temperature continuous</li> <li>• Shaker can be set to run from 00:01 (which means 1 minute) to 99:59, in increments of 00:01</li> <li>• On-board firmware can program multiple parameter changes to temperature and speed. On "R" models, can program optional photosynthetic lighting and UV decontamination</li> </ul>
Computer Interface	
	For data logging and control using laboratory management software or HyperTerminal. BioCommand® SFI data-logging software offered. See options below
Setpoint Retention	
	<ul style="list-style-type: none"> <li>• Setpoints and operating status retained by non-volatile memory</li> <li>• Automatic restart after power is restored (indicated by flashing display)</li> </ul>
Ambient Conditions	
	10 °C to 35 °C. 20 to 80 % RH (non-condensing)

### Specifications, Innova® 40 / 40R\*

	40	40R
Temperature		
Range	5 °C above ambient to 80 °C	15 °C below ambient to 80 °C; min 4 °C
Control	$\pm 0.1$ °C	
Stability	$\pm 0.1$ °C at 37 °C	
Uniformity	$\pm 0.25$ °C	
Orbit	1.9 or 2.5 cm (0.75 or 1 in)	
Shaking speed <sup>1</sup>	25 - 500 rpm $\pm$ , 1 rpm	
Dimensions		
Platform	46 x 46 cm (18 x 18 in)	
Chamber	51.4 x 54.6 x 35.6 cm (20.3 x 21.5 x 14 in) – Height measured from top of platform	
Overall	55.9 x 76.2 x 61 cm (22 x 30 x 24 in)	
Net weight	60 kg (133 lb)	79 kg (175 lb)
Certifications		
		

\* Specifications subject to change without notice.

<sup>1</sup> Speed range based on shaking a typical workload. Baffled flasks can significantly reduce maximum speed.

<sup>2</sup> Platforms sold separately - see page 22.

### Ordering information<sup>2</sup>

Order no.	Description
Innova® 40 Incubated	
M1299-0082	1.9 cm (3/4 in) Orbit, 230 V 50 Hz
M1299-0080	1.9 cm (3/4 in) Orbit, 120 V 60 Hz
M1299-0092	2.5 cm (1 in) Orbit, 230 V 50 Hz
M1299-0090	2.5 cm (1 in) Orbit, 120 V 60 Hz
Innova® 40 R Incubated/Refrigerated	
M1299-0086	1.9 cm (3/4 in) Orbit, 230 V 50 Hz
M1299-0084	1.9 cm (3/4 in) Orbit, 120 V 60 Hz
M1299-0096	2.5 cm (1 in) Orbit, 230 V 50 Hz
M1299-0094	2.5 cm (1 in) Orbit, 120 V 60 Hz
Options for Innova® 40 / 40R	
M1299-0061	Refrigeration Module to upgrade Innova 40 to Innova 40R
M1320-8029	Remote Alarm Contact, factory installed, for communication with user-supplied building monitoring system
M1291-1000	BioCommand® SFI Data-Logging Software, includes software and cable to connect one shaker

# Innova<sup>®</sup> 42 Incubator Shakers

Stackable, incubated, refrigerated shaker with stationary shelf

The Innova 42 incubated and 42R incubated, refrigerated shakers with the Eppendorf triple-eccentric counterbalanced drive provide years of dependable operation. Our most versatile incubator shakers, the programmable Innova models 42 & 42R provide exceptional convenience allowing you to simultaneously shake and static incubate cultures under the same conditions.

Use on or under the bench, or double stacked for space savings. An optional culture drawer, gassing manifold, and humidity probe are available for both the model 42 and 42R and optional photosynthetic and UV germicidal lights are available for model 42R only.


- > Programmable Innova controls automatically changes temperature, speed and optional photosynthetic and UV germicidal lights at timed intervals
- > Accommodates flasks up to 4 L
- > 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
- > Uniform and precise temperature control provide the optimum environment for all samples
- > Moisture proof receptacle in the chamber provides power for accessory instruments





Add the optional culture drawer to help prevent sample desiccation in low-volume cultures

#### Specifications, Innova® 42 / 42R\*

	42	42R
Temperature		
Range	5 °C above ambient to 80 °C	20 °C below ambient to 80 °C; min 4 °C
Range with optional humidity monitor	5 °C above ambient to 60 °C	20 °C below ambient to 60 °C; min 4 °C
Range with optional photosynthetic lights	5 °C above ambient to 70 °C	20 °C below ambient to 70 °C; min 4 °C
Control	± 0.1 °C	
Stability	± 0.1 °C at 37 °C	
Uniformity	± 0.25 °C	
Internal Electric Receptacle	100 Watt moisture-proof internal electric outlet installed in chamber for optional magnetic stirrers, rocker, roller, portable shaker, etc.	
Orbit	1.9 or 2.5 cm (0.75 or 1 in)	
Shaking speed <sup>1</sup>	25 - 400 rpm, ± 1 rpm	
Dimensions		
Platform <sup>2</sup>	46 x 46 cm (18 x 18 in)	
Chamber	51.8 x 51.6 x 47.7 cm (20.4 x 20.3 x 18.8 in) – Height measured from top of platform	
Overall, Single Unit	62 x 75.4 x 82.5 cm (25 x 29.7 x 32.2 in)	
Overall, 2 Units Stacked	62 x 75.4 x 163.7 cm (25 x 29.7 x 64.4 in)	
Net weight	99 kg (217 lb)	121 kg (267 lb)
Certifications		

\* Specifications subject to change without notice.

<sup>1</sup> Speed range based on shaking a typical workload. Baffled flasks can significantly reduce maximum speed.

<sup>2</sup> Platforms sold separately - see page 22.

<sup>3</sup> Reduces maximum flask size on shaker to 4 liters.

#### Ordering information<sup>2</sup>

Order no.	Description
<b>Innova® 42 Incubated</b>	
M1335-0002	1.9 cm (0.75 in) Orbit, 230 V 50 Hz
M1335-0000	1.9 cm (0.75 in) Orbit, 120 V 60 Hz
M1335-0012	2.5 cm (1 in) Orbit, 230 V 50 Hz
M1335-0010	2.5 cm (1 in) Orbit, 120 V 60 Hz
<b>Innova® 42R Incubated/Refrigerated</b>	
M1335-0006	1.9 cm (0.75 in) Orbit, 230 V 50 Hz
M1335-0004	1.9 cm (0.75 in) Orbit, 120 V 60 Hz
M1335-0016	2.5 cm (1 in) Orbit, 230 V 50 Hz
M1335-0014	2.5 cm (1 in) Orbit, 120 V 60 Hz
<b>Options and accessories for Innova® 42 / 42R</b>	
M1335-0300	Programmable Photosynthetic Light Bank for Model 42R only, factory installed
M1335-0500	Humidity Monitor, factory installed
M1335-0400	Programmable UV Germicidal Light for Model 42R only, factory installed <sup>3</sup>
M1335-0501	Culture Drawer, prevents plates from drying <sup>3</sup>
M1335-0800	Stacking Kit, required when stacking 42/42R units (See also M1335-0810 below)
M1335-0810	Stacking Kit, to stack Innova 42/42R units with Innova 4200/4230 shakers
M1335-0600	12-Port Gassing Manifold for direct gassing into flasks, factory installed
M1335-0080	Additional Perforated Shelf & Brackets
M1320-8029	Remote Alarm Contact, factory installed, for communication with user-supplied building monitoring system
M1291-1000	BioCommand® SFI Data-Logging Software, includes software and cable to connect one shaker

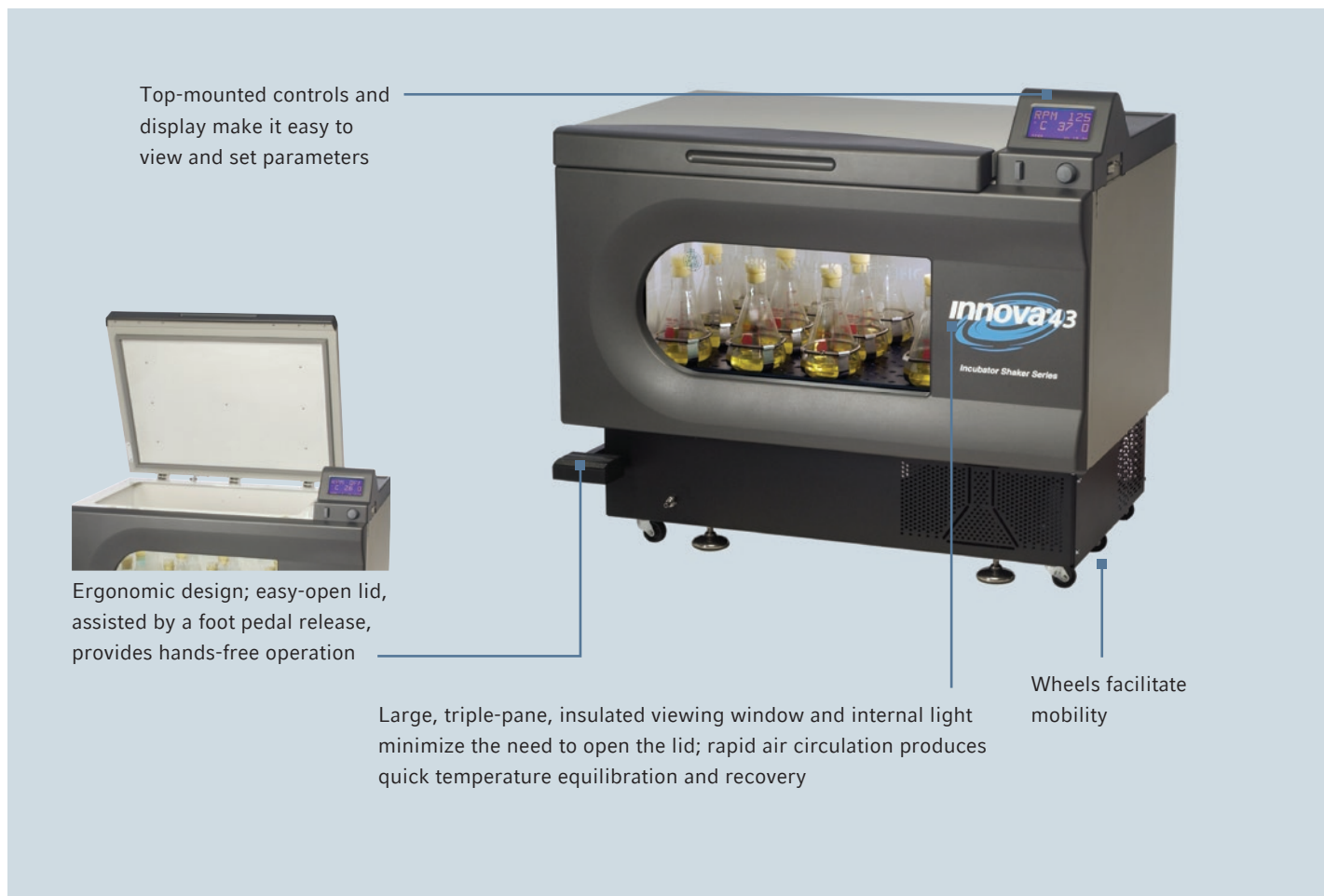
# Innova<sup>®</sup> 43 Incubator Shakers

Console incubator shaker for flasks up to 6 liters

The Innova 43 and 43R incubated console floor model shakers with the Eppendorf triple-eccentric counterbalanced drive provide years of dependable operation. The cast iron support and counter balanced drive is specifically designed to support high-speed applications and heavy workloads.

Innova 43 Incubator Shakers and Innova model 43R with added refrigeration are the perfect choice for handling large quantities or large volumes of cultures with precision and ease. These large-capacity floor-mounted laboratory shakers accept glassware up to 6 L, and come with a controller to program and automate parameter changes on the basis of time.

- > Console style shaker/incubator with triple-eccentric drive provides large capacity shaking for flasks up to 6 L
- > Programmable Innova controls automatically changes temperature, speed and optional photosynthetic and UV germicidal 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<sup>2</sup>






Utility basket accessory allows static incubation or refrigeration of test tubes and other samples; bracket (shown forefront) mounts to side of shaker

- > Multi-function reservoir, with built-in pluggable drain, humidifies chamber to reduce sample evaporation as well as capture accidental spills
- > Spill cover, above the drive, additionally protects electronics and mechanical components
- > Optional programmable, germicidal UV light in the airflow path outside the chamber reduces the bioburden of circulated air
- > Optional gassing manifold, humidity probe, programmable photosynthetic light bank and remote alarm contact are also available

#### Specifications, Innova® 43 / 43R\*

	43	43R
Temperature		
Range	5 °C above ambient to 80 °C	20 °C below ambient to 80 °C; min 4 °C
Range with optional humidity monitor	5 °C above ambient to 60 °C	20 °C below ambient to 60 °C; min 4 °C
Range with optional photosynthetic lights	5 °C above ambient to 70 °C	20 °C below ambient to 70 °C; min 4 °C
Control	± 0.1 °C	
Stability	± 0.1 °C at 37 °C	
Uniformity	± 0.25 °C	
Orbit	2.5 or 5.1 cm (1 or 2 in)	
Shaking speed <sup>1</sup>		
2.5 cm orbit	25 - 500 rpm, ± 1 rpm	
5.1 cm orbit	25 - 300 rpm, ± 1 rpm	
Dimensions		
Platform <sup>2</sup>	76 x 46 cm (30 x 18 in)	
Chamber	88.3 x 56.2 x 48.8 cm (34.8 x 22.3 x 19.3 in) – Height measured from top of platform	
Overall	115.6 x 81.3 x 103.1 cm (45.5 x 20 x 40.6 in)	
Net weight	202 kg (445 lb)	216 kg (475 lb)
Certifications		

\* Specifications subject to change without notice.

<sup>1</sup> Speed range based on shaking a typical workload. Baffled flasks can significantly reduce maximum speed.

<sup>2</sup> Shaker platforms sold separately - see page 22.

<sup>3</sup> Reduces maximum flask size on shaker to 4 liters.

#### Ordering information<sup>2</sup>

Order no.	Description
<b>Innova® 43 Incubated</b>	
M1320-0002	2.5 cm (1 in) Orbit, 230 V 50 Hz
M1320-0000	2.5 cm (1 in) Orbit, 120 V 60 Hz
M1320-0012	5.1 cm (2 in) Orbit, 230 V 50 Hz
M1320-0010	5.1 cm (2 in) Orbit, 120 V 60 Hz
<b>Innova® 43R Incubated/Refrigerated</b>	
M1320-0006	2.5 cm (1 in) Orbit, 230 V 50 Hz
M1320-0004	2.5 cm (1 in) Orbit, 120 V 60 Hz
M1320-0016	5.1 cm (2 in) Orbit, 230 V 50 Hz
M1320-0014	5.1 cm (2 in) Orbit, 120 V 60 Hz
<b>Options and accessories for Innova® 43 / 43R</b>	
M1320-0500	12-Port Gas Manifold for direct gassing into flasks, factory installed
M1320-0300	Programmable Photosynthetic Light Bank for Model 43R only, factory installed <sup>3</sup>
M1320-0400	Programmable UV Germicidal Lamp for Model 43R only, factory installed
M1320-0600	Humidity Monitor, factory installed
M1320-8029	Remote Alarm Contact, factory installed, for communication with user-supplied building monitoring system
M1320-0700	Utility Basket for incubating/refrigerating stationary glassware. 35.6 x 20.3 x 10.2 cm (14 x 8 x 4 in) W x H x D
M1291-1000	BioCommand® SFI Data-Logging Software, includes software and cable to connect one shaker

# Innova<sup>®</sup> 44 Incubator Shakers

Nothing else stacks up — incubated, refrigerated and stackable up to three high

The Innova 44 and 44R incubated and refrigerated stackable shakers with the Eppendorf triple-eccentric counterbalanced drive provide years of dependable operation. The cast iron support and counter balanced drive is specifically designed to support high speed applications and heavy workloads.

Innova 44 incubated shakers provide very broad temperature capabilities for culturing a wide variety of organisms in flasks up to 5 L. Refrigeration module is built into the Innova model 44R, or can be easily added to model 44, at any time. The Innova model 44/44R system provides space-saving design with stacking capabilities, glide up doors and an ergonomic slide-out platform.

- > 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 and UV germicidal lights at timed intervals
- > Versatile accessory platform<sup>2</sup> accommodates flasks up to 5 L
- > Shaking speed of 25 - 400 rpm provides versatility for culturing a wide variety of cell types



Space-saving door glides up and out of your way for easy access to all samples; large, clear glass viewing window provides full visibility of the entire chamber

Slide-out platform, with handles, allows easy access to all samples


Programmable controller automates making multiple setpoint changes to temperature, speed, and optional photosynthetic and UV germicidal lights; see page 4 for details

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



- > Slide-out platform mechanism—provides easy and effortless access to flasks located in the front and back of the shaker/incubator
- > Built-in water reservoir humidifies chamber to reduce sample evaporation, while also protecting unit from spills, includes a drain for easy cleaning.
- > Pull-out service module allows access to all electronic and heating/cooling components, without having to unstack the units

#### Specifications, Innova® 44 / 44R\*

	44	44R
Temperature		
Range	5 °C above ambient to 80 °C, max 55 °C above ambient	20 °C below ambient to 80 °C, min 4 °C; (50 Hz models: 17 °C below ambient to 80 °C)
Range with optional humidity monitor	5 °C above ambient to 60 °C, max 55 °C above ambient	20 °C below ambient to 60 °C, min 4 °C; (50 Hz models: 17 °C below ambient to 60 °C)
Range with optional photosynthetic lights	5 °C above ambient to 70 °C, max 55 °C above ambient	20 °C below ambient to 70 °C, min 4 °C; (50 Hz models: 17 °C below ambient to 70 °C)
Control	± 0.1 °C	
Stability	± 0.1 °C at 37 °C	
Uniformity	± 0.25 °C	
Orbit	2.5 or 5.1 cm (1 or 2 in)	
Shaking speed <sup>1</sup>		
2.5 cm orbit	25 - 400 rpm, ± 1 rpm	
5.1 cm orbit	25 - 300 rpm, ± 1 rpm	
Three stacked	25 - 250 rpm, ± 1 rpm	
Dimensions		
Platform <sup>2</sup>	76 x 46 cm (30 x 18 in)	
Chamber	91 x 66 x 46 cm (36 x 26 x 18 in) – Height measured from top of platform	
Overall, Single Unit <sup>3</sup>	135 x 87 x 73.5 cm (53.1 x 34.3 x 29 in), plus optional base	
Overall, 2 Units Stacked	135 x 87 x 132 cm (53.1 x 34.3 x 52 in), plus optional base	
Overall, 3 Units Stacked	135 x 87 x 198 cm (53.1 x 34.3 x 78 in), plus optional base	
Net weight	237 kg (523 lb)	257 kg (566 lb)
Certifications		

\* Specifications subject to change without notice.

<sup>1</sup> Speed range based on shaking a typical workload. Baffled flasks can significantly reduce maximum speed.

<sup>2</sup> Platforms sold separately - see page 22. Innova 44 platforms are not interchangeable with platforms from other New Brunswick Shakers.

<sup>3</sup> Height of single unit includes feet. No feet used on stacked units

#### Ordering information<sup>2</sup>

Order no.	Description
<b>Innova® 44 Incubated</b>	
M1282-0002	2.5 cm (1 in) Orbit, 230 V 50 Hz
M1282-0000	2.5 cm (1 in) Orbit, 120 V 60 Hz
M1282-0012	5.1 cm (2 in) Orbit, 230 V 50 Hz
M1282-0010	5.1 cm (2 in) Orbit, 120 V 60 Hz
<b>Innova® 44R Incubated/Refrigerated</b>	
M1282-0006	2.5 cm (1 in) Orbit, 230 V 50 Hz
M1282-0004	2.5 cm (1 in) Orbit, 120 V 60 Hz
M1282-0016	5.1 cm (2 in) Orbit, 230 V 50 Hz
M1282-0014	5.1 cm (2 in) Orbit, 120 V 60 Hz
<b>Base: Raises shaker height for easier access to chamber &amp; controls.</b>	
M1282-0600	Short Base to raise shakers by 10.2 cm (4 in). For use with up to three stacked shakers
M1282-0800	Medium Base to raise shakers by 30.5 cm (12 in). For use with up to two stacked shakers
M1282-0700	Tall Base to raise shakers by 40.6 cm (16 in). For use with a single shaker
<b>Stacking Kit: Required when stacking units. One kit joins two shakers. Two kits needed for three shakers.</b>	
M1282-0500	Kit to join two Innova® 44/44R Shakers
M1282-0501	Kit to join Innova® 44/44R with Innova® 4400. (44 shakers must be installed below 4400)
<b>More Options:</b>	
M1282-9922	Programmable Photosynthetic Light Bank for Model 44R only, factory installed
M1282-0291	12-Port Gassing Manifold for direct gassing into flasks, factory installed
M1282-5011	Humidity Monitor, factory installed. (With humidity monitor, max temperature is 60 °C)
M1282-9921	Programmable UV Germicidal Lamp for Model 44R only, factory installed
M1282-8038	Remote Alarm Contact, factory installed, for communication with user-supplied building monitoring system
M1291-1000	BioCommand® SFI Data-Logging Software, includes software, cable to connect one shaker

# Innova<sup>®</sup> 3100 Water Bath Shakers

High-temperature capabilities and superior temperature accuracy

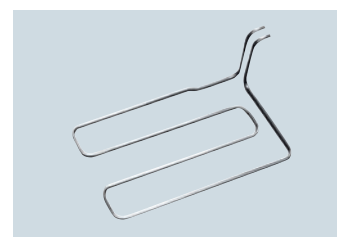
The Innova 3100 Water Bath Shaker provides precise temperature control. This automated water bath shaker is ideal for culturing a wide range of cell types at temperatures up to 80° C. Dependable operation is due in large part to the Eppendorf triple-eccentric counterbalanced drive.

Larger-capacity than many water bath shakers, the Innova 3100 easily accommodates tubes and flasks up to 2 L. A wide temperature range provides for a wide range of laboratory work, using molecular and cell biology protocols. Elevated temperatures are attained with the aid of an optional gable cover and with a bath liquid with a high boiling point to minimize evaporation.

- > Large-capacity orbital shakers with microprocessor control of speed and temperature
- > One-piece seamless bath of heavy gauge stainless steel with rounded corners for ease of cleaning
- > Full and half-size accessory platforms are available (sold separately)
- > Optional cooling assembly for below ambient operation
- > Adjustable water-level control automatically replenishes evaporated water
- > Easy-to-use membrane keypad with LED display
- > Acceleration circuit builds up speed slowly avoiding sudden stop/starts and unwanted splashing



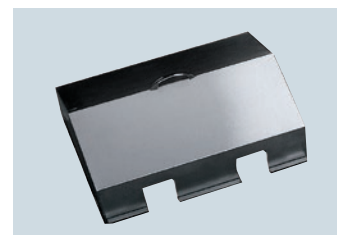
Space-saving dolly allows under-bench use



Factory-installed cooling assembly allows below-ambient temperatures



Half-size platforms provide versatility for accommodating different sized flasks in a single shaker; comes with clamps already mounted



Heat loss and evaporation minimized with use of optional gable covers. Stainless-steel cover (shown) recommended for applications to 80 °C; Plexiglas<sup>®</sup> cover recommended for applications up to 60 °C




**Features, Innova 3100\***

<b>Temperature</b>	
Control	Microprocessor-controlled in increments of $\pm 0.1$ °C
Heaters	Low watt-density silicone rubber mat heater
<b>Shaking</b>	
Drive Mechanism	Triple-eccentric counterbalanced drive in cast-iron housing with 9 permanently lubricated ball bearings. Driven by solid-state brushless DC motor.
Timer	Programmable shaking periods from 0.1 to 99.9 hrs. Triggers audible alarm and energizes status light at end of period. Can be deactivated for continuous operation.
<b>Alarms, audible &amp; visible</b>	
	Indicate when speed deviates more than 5 rpm or temperature more than 1 °C from setpoint, and when timer operation has finished. Alarm may be muted
<b>LED Display</b>	
	Indicates speed in increments of 1 rpm, running time in 0.1 hrs., and alarm conditions. Character height 1.4 cm (9/16 in).
<b>Recorder Output</b>	
	0 - 5 volt output for tracking temperature and speed with external recorder

<b>Safety</b>	Acceleration circuit prevents sudden starts and stops, minimizing splashing and mechanical damage. Sensor shuts off temperature when high-temperature limit is exceeded
<b>Bath</b>	Deep-drawn, stainless-steel, seamless bath with radius corners. Adjustable level control from 1.27 to 7.62 cm (0.5 to 3 in) above shaker platform. Water-in and drain lines have shut-off valves and overflow line.
<b>Automatic Filling</b>	Bath automatically refillable to a volume of 15 L; requires connection to water inlet line

**Specifications, Innova® 3100\***

<b>Temperature</b>	
Range	5 °C above ambient to 80 °C <sup>1</sup> ; Temperatures as low as 20 °C attainable with portable refrigeration system, cooling coil and gable cover
Accuracy	$\pm 0.1$ °C from 30-40 °C; $\pm 0.5$ °C in the remaining range
Orbit	1.3 cm (0.5 in)
<b>Shaking speed</b>	
Control	$\pm 1$ rpm
<b>Dimensions</b>	
Platform	30.5 x 42 cm (12 x 16.5 in)
Bath	35 x 43 x 20 cm (13.25 x 17.5 x 8 in)
Overall	43 x 70 x 37 cm (17 x 27.5 x 14.5 in)
Weight	Net: 47.6 kg (105 lb). Gross: 63 kg (140 lb)
Ambient Conditions	0 °C to 60 °C. 90% RH (non-condensing)
Certification	

**Ordering information<sup>3</sup>**

Order no.	Description
<b>3100 Water Bath</b>	
M1231-0002	1.3 cm (0.5 in) Orbit, 220/230 V 50/60 Hz
M1231-0003	1.3 cm (0.5 in) Orbit, 240 V 50/60 Hz
M1231-0000	1.3 cm (0.5 in) Orbit, 120 V 50/60 Hz
<b>Innova® 3100 Test Tube Racks - requires Universal Platform or Sub-platform. See page 23</b>	
AG7-TT13	Rack for 13 mm Tubes
AG7-TT16	Rack for 16 mm Tubes
AG7-TT20	Rack for 20 mm Tubes
AG7-TT25	Rack for 25 mm Tubes
<b>Other Accessories:</b>	
M1231-2010	Gable Cover, Plexiglas® for temperatures up to 60 °C
M1231-2000	Gable Cover, stainless steel, for temperatures up to 80 °C
M1231-9920	Cooling Assembly, factory installed
M1231-0730	Spare Set of Platform Arms to facilitate rapid change of platforms
M1020-1220	Portable Cart, 57 x 87 cm W x L (22.5 x 32.25 in). Overall height, shaker on cart: 108 cm (42.5 in)
M1195-1020	Space-Saving Dolly, 46 x 72 cm W x L (18 x 28.25 in) Overall height, of shaker on dolly: 51 cm (20 in)

\* Specifications subject to change without notice.

<sup>1</sup> Gable Cover, (stainless steel or Plexiglas®), recommended.<sup>2</sup> Speed range based on shaking a typical workload. Baffled flasks can significantly reduce maximum speed.<sup>3</sup> Full and half-size platforms sold separately - see page 23

# Innova<sup>®</sup> 2000, 2100, 2300 Series

Open-air models, when temperature control is not needed

For shaking in ambient conditions: on the bench, in an incubator, or in a warm or cold room, these Innova Open Air Shakers are the instruments of choice. These ruggedly-constructed benchtop models are offered in six sizes, offering reliable, continuous-duty shaking of test tubes and flasks up to 6 liters.

- > Triple-eccentric counterbalanced drive in cast iron housing provides vibration and trouble free operation for years
- > Unmatched attention to manufacturing details makes New Brunswick shakers exceptionally quiet
- > Easy-to-use membrane keypad with LED display
- > Speed controlled and displayed in increments of 1 rpm
- > Includes audible and visual alarms, timer with continuous operation or automatic shut-off at the end of the study
- > Enclosed electronics & mechanical components prevent internal damage from accidental spills



**Innova 2000**  
Maximum flask size: 500 mL  
Orbit: 1.9 cm (0.75 in)



**Innova 2050**  
Maximum flask size: 2 L  
Orbit: 1.9 cm (0.75 in)



**Innova 2100**  
Maximum flask size: 6 L  
Orbit: 1.9 cm (0.75 in)



**Innova 2150**  
Maximum flask size: 6 L  
Orbit: 1.9 cm (0.75 in)



**Innova 2300**  
Maximum flask size: 6 L  
Orbit: 2.5 cm (1 in) or 5.1 cm (2 in)



**Innova 2350**  
Maximum flask size: 6 L  
Orbit: 2.5 cm (1 in) or 5.1 cm (2 in)



Space-saving Innova 5050 racking system (holds up to four Innova 2300 shakers) shown with extension rack, Model 5051, for up to four added shakers. Electrical/mains strip provides convenient power source<sup>2</sup>.

### Accessories

#### Capacity Upgrade Kit, field installed

M1190-9910	Converts 2000 to 2050
M1194-9926	Converts 2100 to 2150
M1191-9905	Converts 2300 to 2350

#### Temperature and Speed Monitoring Kit

M1194-9909	For Innova 2000
M1194-9924	For Innova 2100 & 2300 Series

#### Innova 5050 Racking System for stacking Innova 2300 shakers

M1232-0100	120 V, 50/60 Hz
M1232-0101	230/240 V, 50/60 Hz

#### Innova 5051 Racking Extension (Requires Innova 5050 racking)


M1232-0110	120 V, 50/60 Hz
M1232-0111	230/240 V 50/60 Hz:

#### Quick Change Platform Kit, enables rapid platform changes without tools (when used, reduces maximum speed to 400 rpm)<sup>1</sup>

M1192-9901	For Innova 2100
M1194-9927	For Innova 2150
M1191-9904	For Innova 2300

### Specifications, Innova 2000, 2100 and 2300 Series<sup>3</sup>

<b>Timer</b>	Programmable shaking periods from 0.1 to 99.9 hrs. Triggers audible alarm and energizes status light at end of period. Can be deactivated for continuous operation.
<b>Alarms, audible &amp; visible</b>	Indicate when speed deviates more than 5 rpm or temperature more than 1 °C from setpoint, and when timer operation has finished. Alarm may be muted.
<b>LED Display</b>	Indicates speed in increments of 1 rpm, running time in 0.1 hrs., and alarm conditions. Character height 1.4 cm (9/16 in)
<b>Setpoint Retention</b>	Setpoints and operating status retained by non-volatile memory. Automatic restart after power is restored (indicated by flashing display)
<b>Ambient Conditions</b>	Temperature: 0 °C to 60 °C. Humidity: 90% non-condensing

<b>Shaking</b>	Drive Mechanism	Triple-eccentric counterbalanced drive in cast iron housing with 9 permanently lubricated ball bearings. Driven by solid-state brushless DC motor
	Control	Microprocessor-controlled in increments ± 1 rpm
<b>Safety</b>		Acceleration circuit prevents sudden starts/stops
<b>Data Logging</b>		Optional Temperature/Speed Monitoring Kit with RTD sensor displays process values on the shaker's LED display, and enables download to user-supplied chart recorder or PC via 0 - 5 V analog signal
<b>Certifications</b>		
<b>Warranty</b>		Comprehensive warranty, contact local Eppendorf distributor

### Ordering information and additional specifications

Model no.	2000	2050	2100	2150	2300		2350	
Orbit	1.9 cm 0.75 in	1.9 cm 0.75 in	1.9 cm 0.75 in	1.9 cm 0.75 in	2.5 cm 1 in	5.1 cm 2 in	2.5 cm 1 in	5.1 cm 2 in
Shaking Speed <sup>1</sup> , (Accuracy ± 1 rpm)	25 - 500 rpm	25 - 500 rpm	25 - 500 rpm	25 - 500 rpm	25 - 500 rpm	25 - 300 rpm	25 - 500 rpm	25 - 300 rpm
220/230 V, 50/60 Hz	M1190-0002	M1190-0012	M1194-0002	M1194-0012	M1191-0002	M1191-0022	M1191-0012	M1191-0032
240 V, 50/60 Hz	M1190-0003	M1190-0013	M1194-0003	M1194-0013	M1191-0003	M1191-0023	M1191-0013	M1191-0033
120 V, 50/60 Hz	M1190-0000	M1190-0010	M1194-0000	M1194-0010	M1191-0000	M1191-0020	M1191-0010	M1191-0030
<b>Dimensions (W x D x H)</b>								
Platform	33 x 28 cm 13 x 11 in	40.6 x 30.5 cm 16 x 12 in	46 x 46 cm 18 x 18 in	61 x 46 cm 24 x 18 in	76 x 46 cm 30 x 18 in		91.4 x 61 cm 36 x 24 in	
Overall cm in	35.5 x 37 x 14.6 14 x 14.5 x 5.8	43 x 37 x 14.6 17 x 14.5 x 5.8	48 x 55 x 16.3 19 x 21.9 x 6.4	60.1 x 59.1 x 16.3 24 x 23.3 x 6.4	76.2 x 56.6 x 16.3 30 x 22.3 x 6.4		91.4 x 61 x 16.3 36 x 24 x 6.4	
<b>Power</b>	35 VA	35 VA	80 VA	80 VA	150 VA		150 VA	
<b>Net Weight</b>	15 kg (33 lb)	16 kg (35 lb)	34 kg (75 lb)	36 kg (80 lb)	48 kg (105 lb)		52 kg (115 lb)	

<sup>1</sup> Specifications subject to change without notice.

<sup>2</sup> Platforms and electrical/mains strip sold separately - see pages 22 & 23.

<sup>3</sup> Speed range based on shaking a typical workload. Baffled flasks can significantly reduce maximum speed.

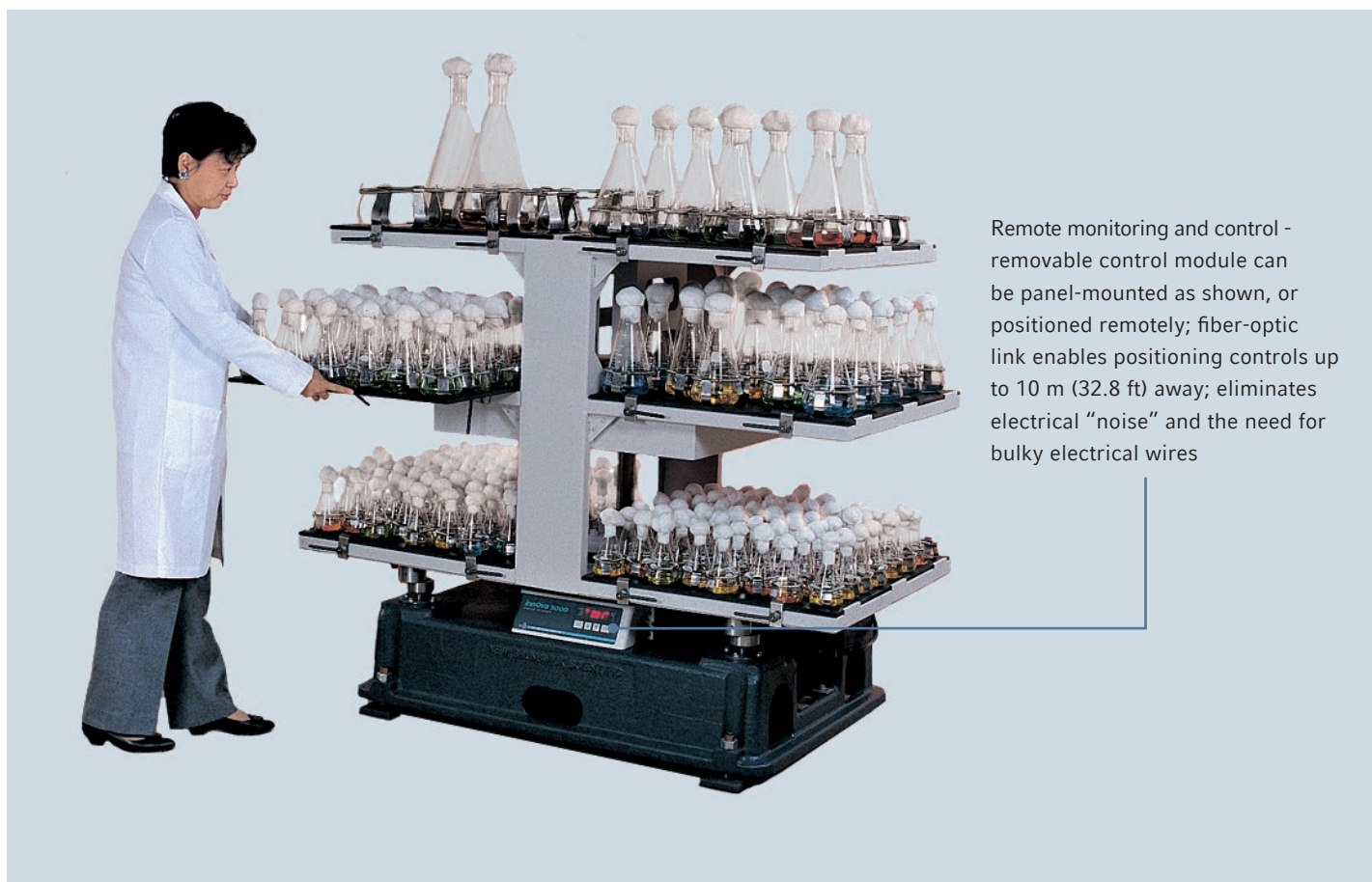
# Innova<sup>®</sup> 5000 Industrial Shakers

Multi-tier open air shaker handles hundreds of samples, simultaneously

Innova 5000 is a multi-tier open air shaker which handles hundreds of samples simultaneously. This workhorse is ideal for screening studies as it uniformly shakes all samples at the same time. Even with all six platforms fully loaded and running at maximum speed, the Innova 5000 is designed for minimum stress and vibration of your samples.

- > 6 removable platforms accommodate flasks from 10 mL to 6 L
- > Large agitation range provides versatility for culturing a wide variety of cell types


- > Counterbalanced orbit provides uniform agitation to all samples without being bolted to the floor
- > Ideal for use in an environmental room; cool-running brushless DC motor has no appreciable effect on chamber temperature.
- > Easy-to-use membrane keypad with LED display
- > Digital display indicates speed, setpoint, running time and alarm conditions
- > Ergonomic design with cantilevered platforms provide unobstructed access to all flasks



Remote monitoring and control - removable control module can be panel-mounted as shown, or positioned remotely; fiber-optic link enables positioning controls up to 10 m (32.8 ft) away; eliminates electrical "noise" and the need for bulky electrical wires

### Specifications, Innova 5000\*

<b>Shaking</b>	
Drive Mechanism	Dynamically-balanced, ball-bearing drive with 4 idler shafts mounted on each corner in a cast-iron housing with 16 permanently lubricated ball bearings. Solid-state brushless D.C. motor. 3/8 hp
Range	25 to 350 rpm with 5.1 cm (2 in) diameter circular orbit
Control	Microprocessor controlled in increments $\pm 1$ rpm
Timer	Programmable shaking periods from 0.1 hr. to 99.9 hrs. Triggers audible alarm and energizes status light at end of period. Can be deactivated for continuous operation.
Alarms, audible & visible	Indicate when speed deviates more than 5 rpm or temperature more than 1 °C from setpoint, and when timer operation has finished. Alarm may be muted
LED Display	Indicates speed in increments of 1 rpm, running time in 0.1 hrs, and alarm conditions. Character height 1.4 cm (9/16 in)
Setpoint Retention	Setpoints and operating status retained by non-volatile memory. Automatic restart after power is restored (indicated by flashing display)
Ambient Conditions	Temperature: 0 °C to 60 °C. Humidity: 90% non-condensing

Safety	Acceleration circuit prevents sudden starts/stops, minimizing both splashing & mechanical damage. Vibration sensor limits speed of shaker when overloaded or unbalanced and shuts off shaker when excess vibration is detected
Orbit	5.1 cm (2 in) diameter orbit
Shaking speed	25 to 350 rpm, ( $\pm 1$ rpm even with line voltage fluctuations as high as $\pm 10\%$ ) <sup>1</sup>
<b>Dimensions (W x D x H)</b>	
Platform <sup>2</sup>	82.5 x 68 cm (32.5 x 26.75 in), each. Maximum capacity: 6 platforms per shaker
Overall <sup>3</sup>	157.5 cm x 96.5 cm x 135 cm (62 x 38 x 53 in)
<b>Electric</b>	
Service	220 V 50/60 Hz; 240 V 50/60 Hz; 120 V 50/60 Hz
Power	150 VA. Fuse protected via main line circuit breaker
<b>Weight</b>	
Net	640 kg (1,410 lbs)
Shipping	717 kg (1,580 lbs)
Certification	

### Ordering information<sup>2</sup>

Order no.	Description
<b>Innova® 5000 (Platforms sold separately)</b>	
M1196-0002	5.1 cm (2 in) Orbit, 220 V 50/60 Hz
M1196-0003	5.1 cm (2 in) Orbit, 240 V 50/60 Hz
M1196-0000	5.1 cm (2 in) Orbit, 120 V 50/60 Hz
<b>Other Options</b>	
M1194-9924	Output signal, 0 - 3.5 V, 1 V per 100 rpm

\* Specifications subject to change without notice.

<sup>1</sup> Speed range based on shaking a typical workload. Baffled flasks can significantly reduce maximum speed.

<sup>2</sup> Platforms sold separately.

<sup>3</sup> Allowances should be made for added height occupied by flasks on top tier and for motion of shaker in determining actual overall dimensions.

<sup>4</sup> Flask clamps, and accessories for Universal Platform are sold separately - see page 24.

<sup>5</sup> When used on bottom tier, can only use front half of platform

<sup>6</sup> For use on top tier only

### Platforms for Innova® 5000

Order no.	Description	Flasks/ Platform	Flasks/ Shaker
M1196-9447	Universal Platform <sup>4</sup>	-	-
<b>Erlenmeyer Flask Dedicated Platforms</b>			
M1196-9900	125 mL	99	594
M1196-9901	250 mL	64	384
M1196-9902	500 mL	42	252
M1196-9903	1 L	23	138
M1196-9904 <sup>5</sup>	2 L	14	70
M1196-9906 <sup>6</sup>	4 L	9	18
M1196-9907 <sup>6</sup>	6 L	8	16
<b>Fernbach Flask Dedicated Platform</b>			
M1196-9905 <sup>5</sup>	2.8 L	9	42

# Platform ordering information

Innova® Model	New Brunswick™ S41i		40 / 40R & 42 / 42R <sup>2</sup>		43 / 43R <sup>6</sup>		44 / 44R <sup>8</sup>		44 / 44R Heavy-Duty Platforms <sup>8</sup>	
	Clamps	Order no.	Clamps	Order no.	Clamps	Order no.	Clamps	Order no.	Clamps	Order no.
<b>Universal Platform<sup>1</sup></b>	—	M1334-9920	—	M1250-9902	—	M1250-9920	—	M1282-9904	—	M1282-9915
Drip Pan for Universal Platform to catch spills	—	—	—	M1250-9906	—	—	—	—	—	—
<b>Dedicated Platforms:</b>										
50 mL Erlenmeyer Flask	—	—	64	M1194-9903	108	M1191-9908	—	—	—	—
125 mL Erlenmeyer Flask	32	M1334-9921	34	M1194-9904	60	M1191-9909	60	M1282-9905	—	—
250 mL Erlenmeyer Flask	24	M1334-9922	25	M1194-9905	40	M1191-9910	40	M1282-9906	—	—
500 mL Erlenmeyer Flask	15	M1334-9923	16	M1194-9906	24	M1191-9911	24	M1282-9907	—	—
1 L Erlenmeyer Flask	11	M1334-9924	9	M1194-9907	15	AG-1	15	M1282-9908	15	M1282-9925
2 L Erlenmeyer Flask	6	M1334-9925	5	M1194-9908	12	AG-2	12	M1282-9909	12	M1282-9926
2.8 L Fernbach Flask	3	M1334-9926	4	M1233-9932	6	AG-28	6	M1282-9910	6	M1282-9927
4 L Erlenmeyer Flask	3	M1334-9927	4	M1233-9930 <sup>5</sup>	6	AG-4	6	M1282-9911	6	M1282-9928
6 L Erlenmeyer Flask	—	—	—	—	4	AG-6 <sup>7</sup>	—	—	—	—
Sticky Pad Platform <sup>3</sup>	—	—	—	M1250-9903	—	M1250-9904	—	M1282-9913	—	—
Quick Change Plat. Kit <sup>4</sup>	—	—	—	M1192-9901	—	—	—	—	—	—
Utility Carrier	—	—	—	M1194-9909	—	—	—	—	—	—
Rod Kit for Utility Carrier, 1 additional rod	—	—	—	M1194-9923	—	—	—	—	—	—
Utility Tray	—	—	—	M1194-9910	—	AG-00	—	—	—	—

Innova® Model	2000 <sup>9</sup>		2050 <sup>10</sup>		2100 <sup>2</sup>		2150 <sup>11</sup>	
	Clamps	Order no.	Clamps	Order no.	Clamps	Order no.	Clamps	Order no.
<b>Universal Platform<sup>1</sup></b>	—	M1001-0240	—	M1190-9900	—	M1250-9902	—	M1194-9912
Drip Pan for Universal Platform to catch spills	—	—	—	—	—	M1250-9906	—	—
<b>Dedicated Platforms:</b>								
10 mL Erlenmeyer Flask	60	AG2-10	86	M1190-9901	—	—	—	—
25 mL Erlenmeyer Flask	32	M1190-9919	48	M1190-9902	—	—	—	—
50 mL Erlenmeyer Flask	20	M1190-9915	35	M1190-9903	64	M1194-9903	80	M1194-9915
125 mL Erlenmeyer Flask	12	M1190-9916	20	M1190-9904	34	M1194-9904	48	M1194-9916
250 mL Erlenmeyer Flask	8	M1190-9917	12	M1190-9905	25	M1194-9905	35	M1194-9917
500 mL Erlenmeyer Flask	6	M1190-9918	8	M1190-9906	16	M1194-9906	20	M1194-9918
1 L Erlenmeyer Flask	—	—	6	M1190-9911	9	M1194-9907	12	M1194-9919
2 L Erlenmeyer Flask	—	—	—	—	5	M1194-9908	8	M1194-9920
2.8 L Fernbach Flask	—	—	—	—	4	M1233-9932	—	—
Sticky Pad Platform <sup>3</sup>	—	M1190-0300	—	—	—	M1250-9903	—	—
Quick Change Plat. Kit <sup>4</sup>	—	—	—	—	—	M1192-9901	—	—
Utility Carrier	—	AG2-UT	—	M1190-9907	—	M1194-9909	—	M1194-9921
Rod Kit for Utility Carrier, 1 additional rod	—	M1001-9920	—	M1190-9920	—	M1194-9923	—	M1194-9925
Utility Tray	—	AG2-00	—	M1190-9908	—	M1194-9910	—	M1194-9922

Innova® Model	2300 <sup>12</sup>		2350 <sup>13</sup>		3100 Full-Size Platforms <sup>14</sup>		3100 Half-Size Platforms <sup>15</sup>	
	Clamps	Order no.	Clamps	Order no.	Clamps	Order no.	Clamps	Order no.
<b>Universal Platform <sup>1</sup></b>	—	M1250-9920	—	PTL-386 & PTL-393	—	M1231-9930	—	—
Drip pan for Universal Platform to catch spills	—	M1250-9921	—	—	—	—	—	—
<b>Dedicated Platforms:</b>								
10 mL Erlenmeyer Flask	—	—	—	—	—	—	—	—
25 mL Erlenmeyer Flask	—	—	—	—	—	—	—	—
50 mL Erlenmeyer Flask	108	M1191-9908	—	—	31	M1231-9933	13	AG7-50
125 mL Erlenmeyer Flask	60	M1191-9909	96	M1191-9912	22	M1231-9934	8	AG7-125
250 mL Erlenmeyer Flask	40	M1191-9910	70	M1191-9913	13	M1231-9935	5	AG7-250
500 mL Erlenmeyer Flask	24	M1191-9911	40	M1191-9914	8	M1231-9936	—	—
1 L Erlenmeyer Flask	15	AG-1	—	—	6	M1231-9937	—	—
2 L Erlenmeyer Flask	12	AG-2	—	—	2	M1231-9938	—	—
2.8 L Fernbach Flask	6	AG-28	—	—	—	—	—	—
4 L Erlenmeyer Flask	6	AG-4	—	—	—	—	—	—
6 L Erlenmeyer Flask	4	AG-6	—	—	—	—	—	—
Sticky Pad Platform <sup>3</sup>	—	M1250-9904	—	—	—	—	—	—
Quick Change Plat. Kit <sup>4</sup>	—	M1191-9904	—	—	—	—	—	—
Utility Tray	—	AG-00	—	AG-21-00	—	—	—	—

## Test Tube Racks

Test tube racks have an adjustable angle and tube height support. Made from stainless steel with inserts to help retain tubes and prevent them from spinning in rack. Finger-tight knobs let you quickly adjust the angle or release the rack from the base plate for easy transport to the bench.



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

<sup>1</sup> Clamps, sticky tape/pad and microplate racks for Universal Platforms sold separately. See page 24. Clamp capacities for Universal Platforms shown page 5.

<sup>2</sup> Innova® 40/40R, 42/42R & 2100 interchangeable platforms, 46 x 46 cm. Phenolic resin, except for the Universal Platform which is aluminum.

<sup>3</sup> Sticky Pad sold separately. Maximum speed when used is 250 rpm. Anodized aluminum platform or Sticky Pad Adapter Kit recommended.

<sup>4</sup> Quick Change Platform Kit enables platforms to be rapidly snapped in place without tools. Platforms sold separately. Max. speed 400 rpm.

<sup>5</sup> For use on Innova® 42/42R only (not 40/40R).

<sup>6</sup> Innova® 43/43R interchangeable platforms, 76 x 46 cm. Aluminum.

<sup>7</sup> AG-6 cannot be used with photosynthetic light bank.

<sup>8</sup> Innova® 44 interchangeable platforms, slide-out, 76 x 46 cm. Cannot be used on other shaker models. Standard platforms are aluminum. Heavy-duty platforms are 0.95 cm thick aluminum plate, recommended for full loads of flasks, 1 L and larger, containing more than 20% volume or when using baffled flasks.

<sup>9</sup> Innova® 2000 interchangeable platforms, 33 x 28 cm, stainless steel.

<sup>10</sup> Innova® 2050 interchangeable platforms, 40.6 x 30.5 cm, stainless steel.

<sup>11</sup> Innova® 2150 interchangeable platforms, 61 x 45.7 cm, phenolic resin.

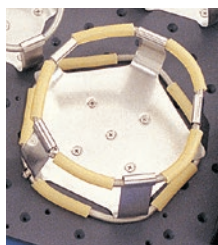
<sup>12</sup> Innova® 2300 interchangeable platforms, 76.2 x 45.7 cm, aluminum.

<sup>13</sup> Innova® 2350 interchangeable platforms, 91.4 x 60.9 cm, marine plywood, except for PLT-393 which is aluminum.

<sup>14</sup> Innova® 3100 interchangeable platforms, 30.5 x 42 cm, stainless steel.

<sup>15</sup> Innova® 3100 interchangeable half-size platforms, require sub-platform M1231-9939 for mounting dedicated half-size platforms and test tube racks. Sub-platform holds 2 half-size flask platforms or 4 racks. For 3100 racks, see page 23.

# New Brunswick™ Shaker Accessories



## Flask Clamps

Constructed from a single piece of stainless steel – not spot welded or riveted – for strength and safety. Clamps 2 L and larger come with extra girdle to securely hold the flask in place (shown). Clamps include screws for mounting to the platform.



## Sticky Tape & Sticky Pad

Ideally suited for securing cultureware that cannot be held with conventional flask clamps. Sticky Pad (shown here) can be regenerated to like-new condition by washing with mild detergent and water; for best performance use on anodized aluminum surface<sup>1</sup>.



## Angled Test Tube Rack/Microplate Holder with optional spacer bar

Secures user-supplied test tube racks and microplates. (Two rack holders pictured on a universal platform.) Or, see our adjustable-angle Test Tube Racks on page 23.



## Media Bottle Clamps

Offered in two sizes to fit most 500 mL or 1 L Media Bottles.

Order no.	Flask Clamps
ACE-10S	10 mL Erlenmeyer Clamp
M1190-9004	25 mL Erlenmeyer Clamp
M1190-9000	50 mL Erlenmeyer Clamp with spring retainer
M1190-9001	125 mL Erlenmeyer Clamp with spring retainer
M1190-9002	250 mL Erlenmeyer Clamp with spring retainer
M1190-9003	500 mL Erlenmeyer Clamp with spring retainer
ACE-1000S	1 L Erlenmeyer Clamp with spring retainer
ACE-2000S	2 L Erlenmeyer Clamp with spring retainer
ACFE-2800S	2.8 L Fernbach Flask Clamp with spring retainer
ACE-3000S	3 L Erlenmeyer Clamp with spring retainer
ACE-4000S	4 L Erlenmeyer Clamp with spring retainer
ACE-6000S	6 L Erlenmeyer Clamp with spring retainer
ACSB-500S	500 mL Media Bottle Clamp with spring retainer
ACSB-1000S	1 L Media Bottle Clamp with spring retainer

Order no.	Other Accessories
TTR-210	Angled Test Tube Rack Holder for user-supplied test tube racks and microplates
TTR-215	Spacer Bar for TTR-210
M1289-0700	Microplate rack, stack three deepwell or nine standard plates
TTR-221	Microplate rack, for single layer of five plates
M1250-9600	Sticky Tape, 500 x 4.1 cm (16.4 feet x 1.6 in) roll
M1250-9700	Sticky Pad, 20 x 20 cm (8 x 8 in) <sup>1</sup>
M1250-9504	Sticky Pad Adapter Kit <sup>1</sup>
M1192-9000	Temperature Validation Kit. Battery-operated digital thermometer (calibrated to NIST standard) & flask
S2116-3051P	Replacement Flat Phillips®-Head Screws, 10–24 x 5/16, Pack of 25, for attaching clamps to aluminum & phenolic platforms
S2116-3101P	Replacement Flat Phillips®-Head Screws, 10–24 x 5/8, Pack of 25, for attaching clamps to model 2350 (plywood) platform only

<sup>1</sup> Sticky Pad can be used on a standard aluminum Universal Platform, but for best results we recommend an anodized aluminum surface that does not have clamp-mounting holes. We therefore offer Sticky Pad Adapter Kits, consisting of two anodized aluminum sheets, each 15.2 x 45.7 cm (6 x 18 in), which can be added to a Universal Platform. Or use a dedicated Sticky Pad Platform: M1250-9903, M1250-9904, M1282-9913 or M1190-0300.

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