



Innova[®] Laboratory Shakers

Incubated, Refrigerated, Open Air and Water Bath Models for All Your Culture Needs

Quality, Reliability & Convenience

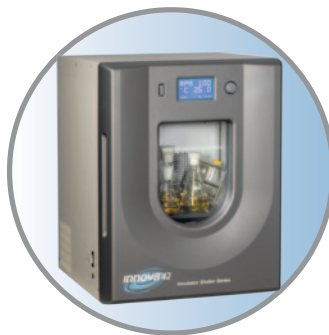
Innova® Shakers – The Lab Standard for Cell Growth in Shake Flasks and Tubes

For over 60 years, New Brunswick Shakers have been synonymous with quality construction and long-term durability. They have been used in more labs the world over than any other shaker, and Innova shakers, our top-of-the line models, continue to be the market leaders. Here are just a few of the many reasons why:

- 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
- Numerous safety features protect you, your cultures and your shaker
- Each shaker is individually inspected and performance tested to ensure it meets our stringent specifications
- Our comprehensive warranty covers parts and labor for the *entire* machine — backed by a support organization known for top-rated customer care
- We offer the largest selection of shakers in the industry to meet a diverse range of culture and molecular biology requirements



Innova 40 Incubator Shakers & 40R with added Refrigeration
Maximum flask size: 3 L
Orbit: 1.9 or 2.54 cm (0.75 or 1 in)
For benchtop use



Innova 42 Incubator Shakers & 42R with added Refrigeration
Maximum flask size: 6 L
Orbit: 1.9 or 2.54 cm (0.75 or 1 in)
On or under bench; double stackable on the floor. Includes stationary shelf for adherent culture



Innova 43 Incubator Shakers & 43R with added Refrigeration
Maximum flask size: 6 L
Orbit: 2.5 or 5.1 cm (1 or 2 in)
Console model for large capacity needs



Innova 44 Incubator Shakers & 44R with added Refrigeration
Maximum flask size: 5 L
Orbit: 2.5 or 5.1 cm (1 or 2 in)
Large-capacity, triple-stackable for space-restricted labs



- Dependable operation, easy-to-use controls and ergonomic design have made Innova shakers a lab standard



Innova 3100 Water Bath Shakers

Maximum flask size: 2 L
Orbit: 1.3 cm (0.5 in)
For use on the bench, mobile cart or dolly



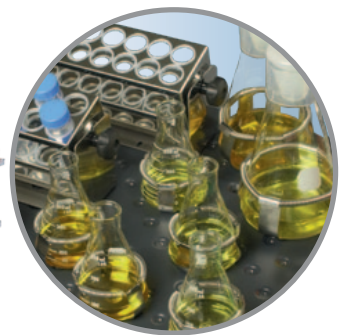
Innova 2000 to 2300 Series Open Air Shakers - Six Models

Maximum flask size: up to 6 L
Orbit: 1.9, 2.5 & 5.1 cm (3/4, 1 & 2 in)
Capacity & orbit vary by model
For use on the bench, or in a warm room or incubator



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

Maximum flask size: 6 L
Orbit: 5.1 cm (2 in)
Floor model for shaking hundreds of samples simultaneously



Platforms, Flask Clamps, Test Tube Racks & More

Many choices are offered to accessorize your shaker. See capacity and ordering info on pages 22 - 24

Get the Innova[®] Advantage

Versatile, Dependable, and Easy to Use

Innova Shakers Offer These Benefits:

- Wide speed range, with options for incubation, 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
 - $\pm 0.1^{\circ}\text{C}$ at 37°C with a uniformity of 0.25°C in incubated/refrigerated models
 - ± 1 rpm, all models
- Unmatched convenience and reproducibility
 - Programmable controller automates changes to setpoints
 - Ramps temperature and speed up/down, and turns optional photosynthetic and UV germicidal lights on/off. (Innova 40, 42, 43 and 44 Series models. See page 6 for details.)
- Timed studies with automated agitation shut-off
 - Can be set for 0.1 - 99.9 hours, in 0.1 hr increments
 - End-of-study alarm (and status light) can be muted for continuous operation
- Data downloadable to your PC
 - All incubated models (except Innova 3100) allow communications with standard laboratory software such as New Brunswick's optional BioCommand SFI or HyperTerminal
- Quietest shakers in the industry
 - 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
 - High-quality components provide years of long life
- Enclosed electronics & mechanical components
 - Prevent internal damage from accidental spills
- Comprehensive warranty
 - Three years for parts. Two years on labor. Covering the entire machine, not just the drive. One year on accessories
 - Extended warranty programs also available



● An Innova shaker for every need

Open air shakers, above left, are offered in six benchtop sizes, and for large-capacity needs a triple-tiered floor model is also offered, (see pages 18 - 22). Or select from our wide range of temperature-controlled shakers, in benchtop, console and space-saving stackable styles. Double-stacked Innova 42 (page 10) and triple-stacked Innova 44 (page 14) are pictured above

Built to Last

What Makes Innova Shakers So Reliable?

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

Dependable operation is due in large part to New Brunswick's often imitated, but never duplicated, Triple-Eccentric Counterbalanced Drive.

Components are fabricated to exacting specifications. Drive shafts, for example, are machined to tolerances of 5 micrometers (0.0002 in), ensuring stable, vibration-free operation, even when operated at speeds up to 500 rpm.

With the highest-quality materials, superior design and precision fabrication, we guarantee our shakers will provide worry-free operation for many years to come.



● **Often imitated but never duplicated!**

Other manufacturers may offer triple-eccentric drives. But only New Brunswick shakers use a broad-based cast-iron support mechanism — the most stable in the industry — properly sized to each shaker, and specifically designed to support high-speed applications and heavy workloads.

Safety is a Top Priority

Safety Feature	Function	Model
Acceleration - Deceleration Circuit	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
Automatic Restart After Power Interrupt	With non-volatile setpoint memory to keep studies running smoothly. Indicated by flashing display	All
Unique Out-of-Balance Sensor	Stops agitation motion when excess vibration is detected	42/42R, 44/44R & 5000
Open Door/Lid Cutout Switch	Stops shaker motion when chamber is open	All temperature-controlled models (except Innova 3100)
Thermostat Fail-Safe	Shuts off heaters if high limit is exceeded	All temperature-controlled models

User-Friendly Controls and Accessories

Advanced Control Provides Accuracy and Convenience

- **All models feature:**

- **Large display.** Clearly visible from all angles, across the room, and in the dark
- **Audible and visible alarms.** Indicate setpoint deviations

- **Innova 40, 42, 43 and 44 Series feature:**

- **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, so your study can get started when you arrive in the lab. Speed up, slow down or stop agitation on a timed basis. Turn optional lighting on/off to mimic diurnal conditions. Or program your shaker to place your cultures in metabolic stasis at the end of the study to eliminate a return trip to the lab. Screen size: 12.7 x 6.98 cm (5 x 2.75 in)

- **Temperature Offset Function** enables matching the temperature display to a reference point — temperature either in the flask or the chamber — to compensate for heat loss due to evaporation; heat gains generated by culture growth; or heat gains from the friction of media against the flask when using high shaking speeds or baffled flasks

Prog 1	STEP #1	STEP #2
Time	0:00	9:00
C	37.0	45.0
RPM	250	350
UV	Off	Off
↔	Save	Cancel

- **Open Air Models & Innova 3100 Water Bath feature:**

- **Easy-to-use membrane keypad with LED display.**

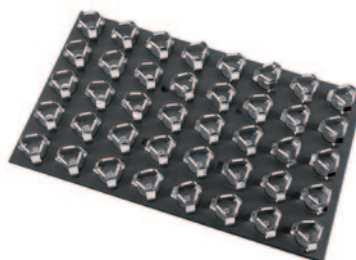
Set operating parameters and monitor current status and alarms. Speed controlled & displayed in increments of 1 rpm, temperature in 0.1°C, running time in 0.1 hrs. Status lights indicate need for maintenance after 10,000 hours of operation, and alarm mute. Wipes down for easy cleanup. Character height: 1.4 cm (9/16 in)



Interchangeable Accessories Provide Versatility



Universal Platforms are 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 are ideal when using a single flask size. These platforms provide maximum capacity and come with clamps pre-installed



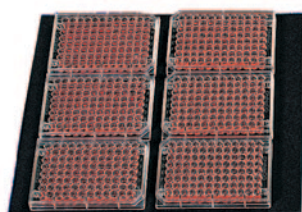
Utility Carriers secure cultureware between adjustable cushioned rods

Shaker Capacities Using Dedicated and Universal Platforms

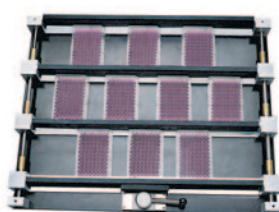
Platform Type	Dedicated				Universal			
Innova Model	40 / 40R	42 / 42R	43 / 43R	44 / 44R	40 / 40R	42 / 42R	43 / 43R	44 / 44R
10 mL Erlenmeyer flasks	—	—	—	—	109	109	183	187
25 mL Erlenmeyer flasks	—	—	—	—	45	64	92	93
50 mL Erlenmeyer flasks	64	64	108	—	45	45	92	91
125 mL Erlenmeyer flasks	34	34	60	60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

Platform Type	Dedicated								Universal							
Innova Model	3100	2000	2050	2100	2150	2300	2350	5000 ⁵	3100	2000	2050	2100	2150	2300	2350	5000 ⁶
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 ⁴	2	—	—	5	6	8	15	12 ⁴
2.8 L Fernbach flasks	—	—	—	4	—	6	—	9 ⁴	—	—	—	4	5	6	12	8 ⁴
4 L Erlenmeyer flasks	—	—	—	—	—	6	—	9 ⁵	—	—	—	4	5	6	10	8 ⁵
5 L Erlenmeyer flasks	—	—	—	—	—	—	—	—	—	—	—	4	4	6	10	6 ⁵
6 L Erlenmeyer flasks	—	—	—	—	—	4	6	8 ⁵	—	—	—	2	3	4	8	6 ⁵

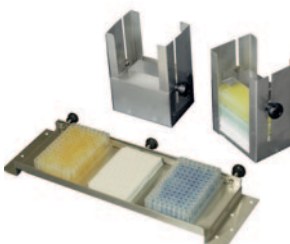
For platform ordering info, see pages 22 - 23. Flask clamps, test tube racks and sticky tape/sticky pad for Universal Platforms are sold separately, see page 24.
¹ Maximum flask size is 4 L when using Photosynthetic Light Bank or Culture Drawer.
² Using Sticky Tape — less capacity with clamps.
³ Per platform - Maximum 6 platforms per shaker.
⁴ When used on bottom tier, can only use front half of platform.
⁵ For use on top tier only.
⁶ Capacity per platform. Accepts up to 6 platforms.



Utility Trays provide a non-slip surface for low-speed applications



Microplate Platforms hold dozens of microplates. Available for Innova 43/43R only. Or add a Microplate Rack to our Universal Platforms



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

Innova[®] 40 - Compact and Convenient

Benchtop Incubator Shaker for Flasks Up to 3 Liters

Precise control, automated operation and high-temperature capability! These shakers have it all. Innova 40 is incubated; Innova 40R comes with refrigeration factory installed; or add the optional refrigeration module at any time.



- For ultimate convenience and reproducibility, an easy-to-use, programmable controller lets you set and store up to four programs, each with up to 15 time-based steps to automate setpoint changes to temperature and speed
- Temperature Range:
 - Innova 40: 5°C above ambient to 80°C
 - Innova 40R: 15°C below ambient to 80°C. Conditional on RH and ambient conditions. Min. 4°C
 - Accuracy: $\pm 0.1^\circ\text{C}$ at 37°C, with a uniformity of $\pm 0.25^\circ\text{C}$
 - Temperature calibration feature enables matching the temperature display to a user-specified reference point, as described on page 6
- Refrigeration option is easily added; field-installable
- Orbit and Speed Range:
 - 1.9 or 2.54 cm orbit options (0.75 or 1 in)
 - 25 to 500 rpm, with accuracy of ± 1 rpm
- Capacity:
 - Accommodates test tubes and flasks up to 3 Liters on 46 x 46 cm (18 x 18 in) accessory platforms 2
- Accidental spills are no problem — one-piece plastic liner catches spills and protects electronics and temperature controls. Optional drip pan additionally protects the drive mechanism
- Optional remote alarm contact safeguards your cultures by sending alarm notifications to your external building monitoring system, automatically

● 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 Incubated/Refrigerated Shakers *

		Incubated Models	Incubated & Refrigerated "R" Models
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 ± 1 rpm	
Timer & Parameter Control	4 Modes	<ul style="list-style-type: none"> Speed and temperature continuous Shaker can be set to run from 0.1 to 99.9 hours, in increments of 0.1 hrs On-board firmware can program multiple parameter changes to temperature and speed. On "R" models, can program optional photosynthetic lighting and UV decontamination Shaker control and data logging via RS-232 and remote computer running conventional laboratory management software or HyperTerminal 	
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	
Computer Interface	RS-232	For data logging and control using laboratory management software or HyperTerminal. BioCommand SFI data-logging software offered - see Options below	
Setpoint Retention	Setpoints and operating status retained by non-volatile memory		
	Automatic restart after power is restored (indicated by flashing display)		
Ambient Conditions	10°C to 35°C. 20 to 80% RH (non-condensing)		
Certifications	 		
Warranty	Comprehensive warranty covering parts and labor. See page 4 for details		

Innova 40 / 40R Additional Specifications *

		Innova 40	Innova 40R
Dimensions (width x depth x height)	Platform ²	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) – With lid open total height is 102 cm (40 in)	
Electric	Service	230 V 50 Hz; 120 V 60 Hz	
	Power	800 VA	1500 VA
Weight	Net	60 kg (133 lb)	79 kg (175 lb)

Ordering Information ²

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

* Specifications subject to change without notice.

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

² Platforms sold separately - see page 22.

Innova[®] 42 – Versatility Plus!

Incubated, Refrigerated Shaker with Stationary Shelf. Stackable Too.

Our most versatile incubator shakers, these models provide capabilities for simultaneous shaking and static culture. An optional photosynthetic light bank enables growth of plant/algae cultures. Use on or under the bench, or double stacked for space savings. Innova 42 is incubated; 42R adds refrigeration.

- Intuitive programming allows multiple parameter changes to temperature, speed, and optional photosynthetic and UV germicidal lights. See page 6 for details
- Temperature Range:
 - Innova 42: 5°C above ambient to 80°C
 - Innova 42R: 20°C below ambient to 80°C. Conditional on RH and ambient conditions. Min. 4°C. Max. temperature is 60°C with optional humidity monitor, 70°C with optional photosynthetic lights
 - Accuracy: $\pm 0.1^{\circ}\text{C}$ at 37°C, with a uniformity of $\pm 0.25^{\circ}\text{C}$
 - Temperature offset feature compensates for heat variances, as described on page 6
- Orbit & Speed Range¹:
 - 1.9 or 2.5 cm (0.75 or 1 in) orbit options
 - 25 to 400 rpm, ± 1 rpm
 - When stacked, max. speed is 400 rpm with flasks up to 500 mL, or up to 300 rpm with larger flasks
- Capacity:
 - Shaker accommodates flasks up to 6 liters on accessory 46 x 46 cm (18 x 18 in) platforms²
 - Stationary shelf enables simultaneous incubation of adherent cultures
- Moisture-proof receptacle in the chamber provides power for an accessory instrument such as rocker, roller, or second shaker
- Large viewing window and internal light minimize the need to open the door. Rapid air circulation produces quick temperature equilibration and recovery
- Multi-function reservoir, with built-in pluggable drain, humidifies chamber to reduce sample evaporation as well as capture accidental spills. Optional humidity monitoring system also offered
- 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, programmable photosynthetic light bank and remote alarm contact are also available



● An adjustable-height, stationary shelf is included; second shelf optional. Or substitute the optional culture drawer to help prevent sample desiccation in low-volume cultures

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

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

Specifications, Innova 42 / 42R * (see also page 9)

		Innova 42	Innova 42R
Internal Electric Receptacle		100 Watt moisture-proof internal electric outlet installed in chamber for optional magnetic stirrers, rocker, roller, portable shaker, etc.	
Illumination	Chamber	2 internal 12 V, 10 Watt halogen lights illuminate chamber	
	Photosynthetic	Optional for 42R only. Programmable photosynthetic light bank with six 15-Watt Gro-Lux lights and an internal on-off switch ³	
Viewing Window		25.1 x 34.6 cm (9.9 x 13.6 in) window	
Dimensions (width x depth x height)	Platform ²	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) – With door open 130 cm (51.2 in) deep	
	Overall, 2 Units Stacked	62 x 75.4 x 163.7 cm (25 x 29.7 x 64.4 in)	
Electric	Service	230 V 50 Hz; 120 V 60 Hz	
	Power	1500 VA	
Weight	Net	99 kg (217 lb)	121 kg (267 lb)

Ordering Information ²

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

* Specifications subject to change without notice.

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

2 Platforms sold separately - see page 22.

3 Reduces maximum flask size on shaker to 4 liters.



Innova[®] 43 - For Large-Capacity Needs

Console Incubator Shaker for Flasks Up to 6 Liters

Dependable Innova 43 Series Shakers offer the convenience of automated programming capability for “set it and forget it” operation. With built-in high-temperature capability, and options for refrigeration, photosynthetic lighting, gassing, and UV decontamination, these shakers can handle virtually any culturing task.

- Programmable controller automates multiple parameter changes to temperature and speed. On refrigerated Model 43R, optional photosynthetic lighting and UV decontamination are also programmable. See page 6 for details
- Temperature Range:
 - Innova 43: 5°C above ambient to 80°C. Max. temperature is 55°C above ambient. With humidity monitor, max. temperature is 60°C
 - Innova 43R: 20°C below ambient to 80°C. 17°C below ambient in 50 Hz models. Conditional on RH and ambient conditions. Min. 4°C. With optional photosynthetic lights, max. temperature is 70°C
 - Accuracy: ± 0.1°C with a uniformity of ± 0.25°C at 37°C
 - Temperature offset feature compensates for heat variances, as described on page 6

- Orbit & Speed Range ¹:
 - 2.5 cm or 5.1 cm (1 in or 2 in) orbit options
 - 25 to 500 rpm with 2.5 cm (1 in) orbit, ± 1 rpm
 - 25 to 300 rpm with 5.1 cm (2 in) orbit, ± 1 rpm
- Capacity:
 - Large 76 x 46 cm (30 x 18 in) accessory platforms accommodate glassware up to 6 liters ²
- 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 & 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



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

Specifications, Innova 43 / 43R * (see also page 9)

		Innova 43	Innova 43R
Dimensions (width x depth x height)	Platform ²	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) – With lid open, total height is 165 cm (65 in)	
Electric	Service	230 V 50 Hz; 120 V 60 Hz	
	Power	800 VA	1,500 VA
Weight	Net	202 kg (445 lb)	216 kg (475 lb)

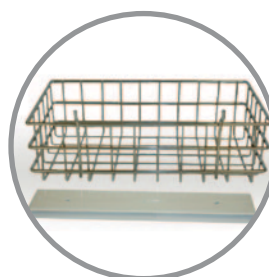
Ordering Information ²

Innova Model	Catalog No. 2.5 cm (1 in) Orbit	Catalog No. 5.1 cm (2 in) Orbit	Electrical Service
43 Incubated	M1320-0002 M1320-0000	M1320-0012 M1320-0010	230 V, 50 Hz 120 V, 60 Hz
43R Incubated/ Refrigerated	M1320-0006 M1320-0004	M1320-0016 M1320-0014	230 V, 50 Hz 120 V, 60 Hz
Options and Accessories for Innova 43 / 43R			
12-Port Gas Manifold for direct gassing into flasks, factory installed			M1320-0500
Programmable Photosynthetic Light Bank for Model 43R only, factory installed ³			M1320-0300
Programmable UV Germicidal Lamp for Model 43R only, factory installed			M1320-0400
Humidity Monitor, factory installed			M1320-0600
Remote Alarm Contact, factory installed, for communication with user-supplied building monitoring system			M1320-8029
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			M1320-0700
BioCommand SFI Data-Logging Software, includes software and cable to connect one shaker			M1291-1000

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

● Large, triple-pane, insulated viewing window and internal light minimize the need to open the lid. Rapid air circulation produces quick temperature equilibration and recovery

● Casters facilitate mobility



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

* Specifications subject to change without notice.

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

² Shaker platforms sold separately - see page 22.

³ Reduces maximum flask size on shaker to 4 liters.

Innova[®] 44 – Nothing Else Stacks Up!

Incubated, Refrigerated and Stackable Up to Three High

Space-saving Innova 44 Series Shakers solve the problem of space-limited labs. These temperature-controlled shakers provide up to three times the culture capacity in about the same footprint as a single console shaker. Innova 44 offers incubation, while Innova 44R adds refrigeration.

- Programmable controller automates making multiple setpoint changes to temperature, speed, and optional photosynthetic and UV germicidal lights. See page 6 for details
- Temperature Range:
 - Innova 44: 5°C above ambient to 80°C.
Max. temperature is 55°C above ambient
 - Innova 44R: 20°C below ambient to 80°C.
Conditional on RH and ambient conditions. Min. 4°C.
50 Hz models: 17°C below ambient to 80°C
 - Accuracy: $\pm 0.1^\circ\text{C}$ at 37°C, with a uniformity of $\pm 0.25^\circ\text{C}$
 - Temperature offset feature compensates for heat variances, as described on page 6
- Orbit & Speed Range ¹:
 - 25 to 400 rpm with 2.5 cm (1 in) orbit option
- Orbit & Speed Range continued ¹:
 - 25 to 300 rpm with 5.1 cm (2 in) orbit option or with two shakers stacked
 - 25 to 250 rpm with three shakers stacked
- Capacity:
 - Large chamber holds test tubes and flasks up to 5 liters on 76 x 46 cm (30 x 18 in) accessory platforms ²
 - Vibration-free design allows shakers to be double or triple stacked
- Interior chamber light enhances observation
- Multi-function reservoir humidifies chamber to reduce sample evaporation and protect shaker mechanism from spills. Built-in pluggable drain facilitates cleanup. Optional humidity monitor also available
- Double-pane, thermal, insulating glass and heavy-duty leak-free door gasket ensure excellent temperature uniformity
- Superior air circulation system provides rapid temperature equilibration and excellent uniformity
- Optional germicidal UV light in the airflow path outside the chamber reduces the bioburden of circulated air. Optional photosynthetic lighting and remote alarm contact also offered



- 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

Specifications, Innova 44 / 44R * (see also page 9)

		Innova 44	Innova 44R
Dimensions (width x depth x height)	Platform ²	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	
Door open adds 53 cm (21 in) to height ³	Overall, Single Unit	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	
Electric	Service	230 V 50 Hz; 120 V 60 Hz	
	Power	800 VA	1,400 VA
Weight	Net	237 kg (523 lb)	257 kg (566 lb)

Ordering Information ²

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

* Specifications subject to change without notice.

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

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

3 Height of single unit includes feet. No feet used on stacked units



- We've 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[®] 3100 Water Bath Shaker

High-Temperature Capabilities and Superior Temperature Accuracy

Many scientists prefer the temperature stability afforded by water bath shakers. The Innova 3100 was designed for just those applications. With temperature control to 80°C, the 3100 is ideal for a wide range of culturing and hybridization protocols.

- Temperature Range:
 - 5°C above ambient to 80°C¹
 - Accuracy: ± 0.1°C from 30 to 40°C; 0.5°C in the remaining range
 - Temperatures as low as 20°C attainable with portable refrigeration system, cooling coil and gable cover
- Orbit & Speed Range
 - 1.3 cm (0.5 in) orbit
 - 25 to 400 rpm, ± 1 rpm²
- Capacity:
 - Accommodates flasks up to 2 liters on full-sized 30.5 x 42 cm (12 x 16.5 in), rust-resistant, stainless steel accessory platforms.
 - Half-sized platforms are also offered for added versatility³
- Acceleration circuit builds speed gradually, avoiding sudden starts and unwanted splashing
- Never run dry! Adjustable water level control automatically replenishes evaporated water. Control valves for water-in and drain simplify cleaning, filling and thorough draining. Alarm signals low water level
- One-piece seamless bath is crevice-free, made from rust-resistant stainless steel, and is easy to keep clean. Deep bath with rounded corners and baffles allows elevated speeds with minimal turbulence or splashing



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



- 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



- Space-saving dolly allows under-bench use

Specifications, Innova 3100 *

		Innova 3100
Temperature	Control	Microprocessor-controlled in increments of $\pm 0.1^{\circ}\text{C}$
	Heaters	Low watt-density silicone rubber mat heater
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 ± 1 rpm
	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
Alarms	Audible and 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)
Recorder Output		0 - 5 volt output for tracking temperature and speed with external recorder
Safety		Acceleration circuit prevents sudden starts and stops, minimizing splashing and mechanical damage. Sensor shuts off temperature when high-temperature limit is exceeded
Bath (width x depth x height)		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. 35 x 43 x 20 cm (13.25 x 17.5 x 8 in)
Automatic Filling		Bath automatically refillable to a volume of 15 L; requires connection to water inlet line
Dimensions (width x depth x height)	Platform ³	30.5 x 42 cm (12 x 16.5 in)
	Overall	43 x 70 x 37 cm (17 x 27.5 x 14.5 in)
Electric	Service	220/230 V 50/60 Hz; 240 V 50/60 Hz; 120 V 50/60 Hz
	Power	1100 VA
Weight		Net: 47.6 kg (105 lb). Gross: 63 kg (140 lb)
Ambient Conditions		0°C to 60°C. 90% RH (non-condensing)
Certification		 
Warranty		Comprehensive warranty covering parts and labor. See page 4 for details

Ordering Information ³

Innova Model	Catalog No. 1.3 cm (0.5 in) Orbit	Electrical Service
3100 Water Bath	M1231-0002 M1231-0003 M1231-0000	220/230 V, 50/60 Hz 240 V, 50/60 Hz 120 V, 50/60 Hz
Options and Accessories for Innova 3100		
Innova 3100 Test Tube Racks - requires Universal Platform or Sub-platform. See page 23		
Rack for 13 mm Tubes		AG7-TT13
Rack for 16 mm Tubes		AG7-TT16
Rack for 20 mm Tubes		AG7-TT20
Rack for 25 mm Tubes		AG7-TT25
Other Accessories:		
Gable Cover, Plexiglas for temperatures up to 60°C		M1231-2010
Gable Cover, Stainless Steel, for temperatures up to 80°C		M1231-2000
Cooling Assembly, factory installed		M1231-9920
Spare Set of Platform Arms to facilitate rapid change of platforms		M1231-0730
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)		M1020-1220
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)		M1195-1020

* Specifications subject to change without notice.

1 Gable Cover, (stainless steel or Plexiglas), recommended.

2 Speed range based on shaking a typical workload. Baffled flasks can significantly reduce maximum speed.

3 Full and half-size platforms sold separately - see page 23

Innova[®] 2000, 2100 and 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.

- Low profile — less than 15 cm (6 in) tall — enables use of multiple shakers in an incubator or environmental chamber
- Orbit:
 - Innova 2000/2050 & 2100/2150: 1.9 cm orbit (0.75 in)
 - Innova 2300/2350: 2.5 and 5.1 cm orbit options (1 or 2 in)
- Speed Range ¹
 - 25 to 500 rpm all models except 5.1 cm (2 in) orbit models
 - 25 to 300 rpm with 5.1 cm (2 in) orbit
 - Accuracy ± 1 rpm
- Capacity (see pages 22 & 23):
 - Innova 2000 - maximum flask size is 500 mL
 - Innova 2050 - maximum flask size is 2L
 - Innova 2100 to 2300 Series - maximum flask size is 6 L
- Increase capacity by up to 45% with optional, field-installable Capacity Upgrade Kits. Kits contain counterweights and, if appropriate, outrigger feet for added stability
 - Convert an Innova 2000 to a 2050, a 2100 to 2150, or 2300 to 2350. Or select factory-built models 2050, 2150 and 2350
- Measure, display and record ambient or sample temperature and speed using an Optional Temperature/Speed Monitoring Kit. An analog signal (0 - 5 V) enables recording to a user-supplied chart recorder



● **Save space with Innova 5050 racking system.** Holds up to four Innova 2300 shakers on sturdy, stainless-steel, adjustable-height shelves; three shakers when using 1 or 2 L flasks. Electrical/mains strip provides convenient power source for shakers, which are sold separately. Shown with extension rack, Model 5051, which supports up to four added shakers

● For frequent platform changes, Quick-Change Platform Kits enable snapping platforms in place without tools ²



Innova 2000



Innova 2050



Innova 2100



Innova 2150



Innova 2300





Innova 2350

Specifications, Innova 2000, 2100 and 2300 Series, and 5000 Open Air Shakers *

Innova		2000	2050	2100	2150	2300	2350	5000
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						
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						
Warranty		Comprehensive warranty covering parts and labor. See page 4 for details						

Additional Specifications, Innova 2000, 2100 and 2300 Series *

Innova		2000	2050	2100	2150	2300	2350	
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						
Safety		Acceleration circuit prevents sudden starts and stops						
Data Logging		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						
Dimensions, width x depth x height	Platform ²	cm	33 x 28	40.6 x 30.5	46 x 46	61 x 46	76 x 46	91.4 x 61
		in	13 x 11	16 x 12	18 x 18	24 x 18	30 x 18	36 x 24
	Overall	cm	35.5 x 37 x 14.6	43 x 37 x 14.6	48 x 55 x 16.3	60.1 x 59.1 x 16.3	76.2 x 56.6 x 16.3	91.4 x 61 x 16.3
		in	14 x 14.5 x 5.8	17 x 14.5 x 5.8	19 x 21.9 x 6.4	24 x 23.3 x 6.4	30 x 22.3 x 6.4	36 x 24 x 6.4
Electric	Service	220/230 V, 50/60 Hz; 240 V, 50/60 Hz; 120 V, 50/60 Hz						
	Power	35 VA		80 VA		150 VA		
Weight	Net	15 kg (33 lb)	16 kg (35 lb)	34 kg (75 lb)	36 kg (80 lb)	48 kg (105 lb)	52 kg (115 lb)	
Certifications		 						

Ordering Information ²

Electrical Service	2000	2050	2100	2150	2300		2350	
	1.9 cm (0.75 in) Orbit				2.5 cm (1 in) Orbit	5.1 cm (2 in) Orbit	2.5 cm (1 in) Orbit	5.1 cm (2 in) Orbit
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
Accessories								
Capacity Upgrade Kit, field installed	Converts 2000 to 2050					M1190-9910		
	Converts 2100 to 2150					M1194-9926		
	Converts 2300 to 2350					M1191-9905		
Temperature and Speed Monitoring Kit	For Innova 2000					M1194-9909		
	For Innova 2100 & 2300 Series					M1194-9924		
Innova 5050 Racking System for stacking Innova 2300 shakers	230/240 V, 50/60 Hz: M1232-0101				120 V, 50/60 Hz: M1232-0100			
Innova 5051 Racking Extension (Requires Innova 5050 racking)	230/240 V 50/60 Hz: M1232-0111				120 V, 50/60 Hz: M1232-0110			
Quick Change Platform Kit, enables rapid platform changes without tools (when used, reduces maximum speed to 400 rpm) ¹	For Innova 2100					M1192-9901		
	For Innova 2150					M1194-9927		
	For Innova 2300					M1191-9904		

* Specifications subject to change without notice. Model 5000 shakers are described on page 20.

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

² Platforms sold separately - see pages 22 & 23.

Innova[®] 5000 - An Industrial Workhorse

Multi-Tier Open Air Shaker Handles Hundreds of Samples, Simultaneously

Ideal for screening studies, this workhorse uniformly shakes hundreds of samples at a time. Designed for minimum stress and vibration, even when fully loaded and running at the maximum speed of 350 rpm.


- Orbit and Speed Range:
 - 5.1 cm (2 in) diameter orbit
 - 25 to 350 rpm, precisely maintained ± 1 rpm even with line voltage fluctuations as high as $\pm 10\%$ ¹
- Capacity:
 - Holds hundreds of samples on up to six accessory platforms, each sized 82.5 x 68 cm (32.5 x 26.75 in) ²
 - Accepts 10 mL to 4 L flasks on lower two tiers; and flasks up to 6 L on the top tier
- Ergonomic design - cantilevered platforms provide unobstructed access to all flasks. Platforms lock in place without tools

- Precisely balanced, extremely stable shaker mechanism on a cast-iron base need not be bolted to the floor, simplifying installation
- Ideal for use in an environmental room. Cool-running brushless DC motor has no appreciable effect on chamber temperature
- Four cushioned idlers mounted to the corners of the base stabilize the shaker and ensure uniform motion without undue strain or structure fatigue. Elimination of commutators and motor brushes further minimizes wear and maintenance
- Optional output signal enables recording speed on an external chart recorder



- 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 meters (32.8 ft) away; and eliminates electrical "noise" as well as the need for bulky electrical wires

Specifications, Innova 5000 * (see also page 19)

		Innova 5000
Shaking	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 ± 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
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
Dimensions, width x depth x height	Platform ²	82.5 x 68 cm (32.5 x 26.75 in), each. Maximum capacity: 6 platforms per shaker
	Overall ³	157.5 cm x 96.5 cm x 135 cm (62 x 38 x 53 in)
Electric	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
Weight	Net	640 kg (1,410 lbs)
	Shipping	717 kg (1,580 lbs)
Certification		

Ordering Information ²

Innova Model	Catalog No. 5.1 cm (2 in) Orbit		Electrical Service
5000 (Platforms sold separately)	M1196-0002	M1196-0003	220 V, 50/60 Hz
	M1196-0000		240 V, 50/60 Hz
			120 V, 50/60 Hz
Accessories & Options for Innova 5000			
Platform Description	No. Flasks/Platform	No. Flasks/Shaker	Catalog No.
Universal Platform ⁴	–	–	M1196-9447
125 mL Erlenmeyer Flask Dedicated Platform	99	594	M1196-9900
250 mL Erlenmeyer Flask Dedicated Platform	64	384	M1196-9901
500 mL Erlenmeyer Flask Dedicated Platform	42	252	M1196-9902
1 L Erlenmeyer Flask Dedicated Platform	23	138	M1196-9903
2 L Erlenmeyer Flask Dedicated Platform	14	70	M1196-9904 ⁵
2.8 L Fernbach Flask Dedicated Platform	9	42	M1196-9905 ⁵
4 L Erlenmeyer Flask Dedicated Platform	9	18	M1196-9906 ⁶
6 L Erlenmeyer Flask Dedicated Platform	8	16	M1196-9907 ⁶
Other Options			
Output signal, 0 - 3.5 V, 1 V per 100 rpm			M1194-9924

* Specifications subject to change without notice.

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

² Platforms sold separately.

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

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

⁵ When used on bottom tier, can only use front half of platform

⁶ For use on top tier only

Platform Ordering Information

Innova Model	40 / 40R & 42 / 42R ²		43 / 43R ⁶		44 / 44R ⁸		44 / 44R Heavy-Duty Platforms ⁸	
Description	Clamps	Cat. No.	Clamps	Cat. No.	Clamps	Cat. No.	Clamps	Cat. No.
Universal Platform ¹	—	M1250-9902	—	M1250-9920	—	M1282-9904	—	M1282-9915
Drip Pan for Universal Platform to catch spills	—	M1250-9906	—	—	—	—	—	—
Dedicated Platforms:								
50 mL Erlenmeyer Flask	64	M1194-9903	108	M1191-9908	—	—	—	—
125 mL Erlenmeyer Flask	34	M1194-9904	60	M1191-9909	60	M1282-9905	—	—
250 mL Erlenmeyer Flask	25	M1194-9905	40	M1191-9910	40	M1282-9906	—	—
500 mL Erlenmeyer Flask	16	M1194-9906	24	M1191-9911	24	M1282-9907	—	—
1 L Erlenmeyer Flask	9	M1194-9907	15	AG-1	15	M1282-9908	15	M1282-9925
2 L Erlenmeyer Flask	5	M1194-9908	12	AG-2	12	M1282-9909	12	M1282-9926
2.8 L Fernbach Flask	4	M1233-9932	6	AG-28	6	M1282-9910	6	M1282-9927
4 L Erlenmeyer Flask	4	M1233-9930 ⁵	6	AG-4	6	M1282-9911	6	M1282-9928
6 L Erlenmeyer Flask	—	—	4	AG-6 ⁷	—	—	—	—
Sticky Pad Platform ³	—	M1250-9903	—	M1250-9904	—	M1282-9913	—	—
Quick Change Plat. Kit ⁴	—	M1192-9901	—	—	—	—	—	—
Utility Carrier	—	M1194-9909	—	—	—	—	—	—
Rod Kit for Utility Carrier, 1 additional rod	—	M1194-9923	—	—	—	—	—	—
Utility Tray	—	M1194-9910	—	AG-00	—	—	—	—
Microplate Platform	—	—	—	M1243-2500	—	—	—	—

Innova Model	2000 ⁹		2050 ¹⁰		2100 ²		2150 ¹¹	
Description	Clamps	Cat. No.	Clamps	Cat. No.	Clamps	Cat. No.	Clamps	Cat. No.
Universal Platform ¹	—	M1001-0240	—	M1190-9900	—	M1250-9902	—	M1194-9912
Drip Pan for Universal Platform to catch spills	—	—	—	—	—	M1250-9906	—	—
Dedicated Platforms:								
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 ³	—	M1190-0300	—	—	—	M1250-9903	—	—
Quick Change Plat. Kit ⁴	—	—	—	—	—	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 ¹²		2350 ¹³		3100 Full-Size Platforms ¹⁴		3100 Half-Size Platforms ¹⁵	
	Clamps	Cat. No.	Clamps	Cat. No.	Clamps	Cat. No.	Clamps	Cat. No.
Universal Platform ¹	—	M1250-9920	—	PTL-386 & PTL-393	—	M1231-9930	—	—
Drip pan for Universal Platform to catch spills	—	M1250-9921	—	—	—	—	—	—
Dedicated Platforms:								
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 ³	—	M1250-9904	—	—	—	—	—	—
Quick Change Plat. Kit ⁴	—	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		
Catalog No.	Diameter	Tubes/Rack	Catalog No.	Diameter	Tubes/Rack	Catalog 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

¹ Clamps, sticky tape/pad and microplate racks for Universal Platforms sold separately. See page 24. Clamp capacities for Universal Platforms shown page 7.

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

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

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

⁵ For use on Innova 42/42R only (not 40 /40R).

⁶ Innova 43/43R interchangeable platforms, 76 x 46 cm. Aluminum.

⁷ AG-6 cannot be used with photosynthetic light bank.

⁸ 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.

⁹ Innova 2000 interchangeable platforms, 33 x 28 cm, stainless steel.

¹⁰ Innova 2050 interchangeable platforms, 40.6 x 30.5 cm, stainless steel.

¹¹ Innova 2150 interchangeable platforms, 61 x 45.7 cm, phenolic resin.

¹² Innova 2300 interchangeable platforms, 76.2 x 45.7 cm, aluminum.

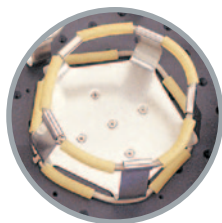
¹³ Innova 2350 interchangeable platforms, 91.4 x 60.9 cm, marine plywood, except for PLT-393 which is aluminum.

¹⁴ Innova 3100 interchangeable platforms, 30.5 x 42 cm, stainless steel.

¹⁵ 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.

Accessories

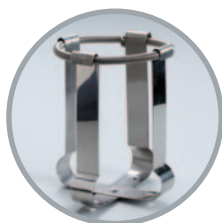
Flask Clamps, Microplate Racks, Sticky Tape and Sticky Pad



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



● **Sticky Tape & Sticky Pad** are ideally suited for securing cultureware that cannot be held with conventional flask clamps. Designed for speeds up to 250 rpm, depending on orbit diameter, flask size and load; not for use in a water bath. Sticky Tape (pictured on page 6) can be used several times before losing adhesive properties. Sticky Pad (shown here) can be regenerated to like-new condition by washing with mild detergent and water, and for best performance should be used on an anodized aluminum surface ¹



● **Media Bottle Clamps** are offered in two sizes to fit most 500 mL or 1 L Media Bottles



● **Angled Test Tube Rack/Microplate Holder** with optional spacer bar is offered for securing 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

Catalog 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

Catalog 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 4.06 cm (16.4 feet x 1.6 in) roll
M1250-9700	Sticky Pad, 20 x 20 cm (8 x 8 in) ¹
M1250-9504	Sticky Pad Adapter Kit ¹
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

¹ 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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