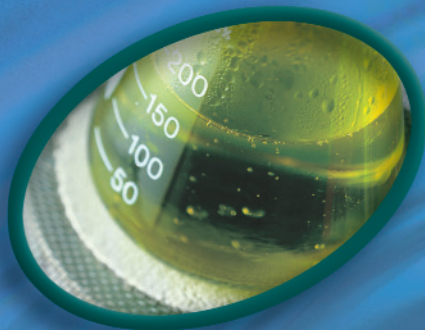
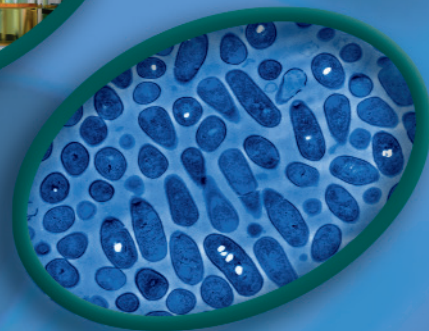


innova

New Space-Saving Innova® 42
Incubator Shakers &
Innova 42R with Refrigeration



New Brunswick Scientific

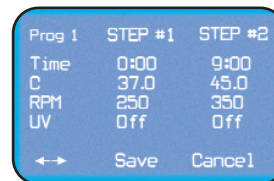
Use On or Under Your Lab Bench, Or Double

Our most versatile incubator shakers, programmable Innova 42 & 42R provide “set it and forget it” convenience. Model 42R includes refrigeration for near- and sub-ambient work. An optional photosynthetic light bank is also available. When refrigeration is not needed Innova 42 does the job. Both multi-purpose models accept flasks to 6 liters, and have an adjustable-height shelf for added incubating or storing capability. With a new lower-height design and a front-opening door, they can be used either on or under the bench, or double stacked for space savings.

- **Controls for Entering and Viewing Setpoints are Exceptionally Easy to Use, and Positioned at the Top of the Shaker for Easy Access.** Display is visible from all angles, across the room, and in the dark.
- **Programmable Controller** ramps temperature up or down on a timed basis. Speeds up, slows down, or stops agitation automatically. Or places your cultures in metabolic stasis until you're ready to attend to them. On Innova 42R, optional photosynthetic lighting and UV decontamination are also programmable.
- **Wide Temperature Range:**
Innova 42: 5°C above ambient to 80°C.
Innova 42R: 20°C below ambient to 80°C*.
(* Minimum temperature 4°C)
- **Uniform and Precise Temperature Control:** $\pm 0.1^\circ\text{C}$ with uniformity of $\pm 0.25^\circ\text{C}$ at 37°C.
- **Agitation: 25 - 400 rpm (± 1 rpm)** provides versatility for culturing a wide range of cell types.
- **Single Adjustable-Height, Stationary Shelf** adds storage for incubating plates and other samples.
- **In-Chamber, Moisture-Proof Receptacle Provides Power for an Accessory Instrument** such as rocker, roller, or second shaker.
- **Large Viewing Window & Internal Light Provide Clear Chamber Visibility,** minimizing the need to open the door. Rapid air circulation produces quick temperature equilibration and recovery.



Short on space? At just 32.2" (81.79 cm) tall, the Innova 42 shaker easily fits on or under your lab bench; or can be stacked two high as shown.




Programmable controller automates parameter changes on a timed basis. Holds up to 4 programs, 15 steps each. Can eliminate unnecessary return trips to the lab, automates heat inductions and more.



Large, easy-to-read display screen clearly shows operating parameters and actual value. Displayed parameters can be selected by user. A single knob selects all operating conditions easily and quickly. Screen size: 2 $\frac{3}{4}$ " x 5" (6.98 x 12.7 cm)

- **Output Signal to RS-232 Enables Data Logging and Computer Control.**
- **Timed Studies Can Be Programmed for Automatic Agitation Shut-Off.** End-of-study alarm & status light can be deactivated for continuous operation.
- **Audible and Visible Alarms** alert the user to setpoint deviations. Audible alarm can be muted.

Stacked: Innova® 42 & 42R Incubator Shakers

- **Multi-Function Reservoir** humidifies chamber to reduce sample evaporation and protect unit from spills. Built-in drain facilitates clean up.
- **Spill Cover Ensures Electronics & Mechanical Components Are Protected From Accidental Spills.**
- **Automatic Restart After Power Interrupt with Non-Volatile Memory** keeps studies running smoothly.
- **NBS Shakers Are the Quietest-Running in the Industry** providing a more favorable work environment.
- **NBS' Often Imitated, But Never Duplicated Triple-Eccentric Drive** is precisely counterbalanced to impart smooth, uniform motion to all flasks regardless of their position on the platform. Ensures dependable day-in and day-out performance.
- **Open-Door Cutout Switch** stops agitation when door is open.
- **Thermostat Fail-Safe** shuts off heaters if high limit is exceeded.
- **Cool-Running Brushless Motor** never requires lubrication; and provides years of long life.
- **Unique Acceleration - Deceleration Circuit** prevents sudden starts and stops. Minimizes mechanical damage for longer shaker life. Eliminates flask closure wetting which would otherwise interfere with oxygen transfer.
-  **Certified.** Meets CSA, UL and CE standards.
- **Comprehensive Warranty** covers three years on parts and two years on labor.



Optional Culture Drawer helps prevent sample desiccation.



Front-loading Innova 42 & 42R shakers accept a wide variety of interchangeable 18" x 18" (46 x 46 cm) accessory platforms for glassware up to 6 liters. An adjustable-height, stationary shelf is included for incubating or refrigerating added samples.

Options

- **Refrigeration** - select Model Innova 42R.
- **Orbit** - $\frac{3}{4}$ " or 1" (1.9 or 2.54 cm) diameter orbits.
- **Humidity Probe** - monitors humidity levels throughout your process.
- **12-Port Gassing Manifold** - permits direct gassing into flasks or other vessels.
- **Programmable Ultraviolet Light** - a germicidal lamp in the airflow path outside the chamber reduces the bio-burden of circulated air on Model Innova 42R only.
- **Programmable Photosynthetic Light Bank** - is available for culturing plant cells (Innova 42R only).
- **Culture Drawer** - provides easy slide-out access for plates and other samples. Prevents samples from drying out.
- **Stacking Kit** - required to bolt two units together for added stability.

Specifications *		Innova 42	Innova 42R
Temperature	Range †	5°C above ambient to 80°C	20°C below ambient to 80°C. Min. setpoint is 4°C
	Accuracy	± 0.1°C at 37°C, with a nominal uniformity of ± 0.25°C	
	Refrigeration	Model 42R only: Hermetically-sealed compressor uses CFC-free refrigerant	
	Heaters	Low watt-density, resistance-type heaters with high-temperature safety thermostat cut off	
Shaking	Range §	25 to 400 rpm, with 3/4" (1.9 cm) or 1" (2.54) orbit	
	Control	± 1 rpm	
	Drive Mechanism	Triple-eccentric counterbalanced drive in cast-iron housing with 9 permanently lubricated ball bearings. Solid-state brushless D.C. motor	
Timer and 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 ➤ On-board firmware can program multiple parameter changes to temperature and speed. On 42R, firmware can program optional photosynthetic lighting & 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 setpoints, and when timer operation has expired. Alarm may be muted	
Safety		Sensors limit speed when shaker is unbalanced, stops shaker when excess vibration is detected or door opened, and shuts off temperature when high-temp. limit is exceeded	
Computer Interface		RS-232 for data logging and control using laboratory management software or HyperTerminal	
Setpoint Retention		Setpoints and operating status retained by non-volatile memory. Automatic restart after power is restored (indicated by flashing display)	
Electric	Service	120V 60 Hz; 230V 50 Hz; 100V 60 Hz; 100V 50 Hz	
	Power	1,500VA	
Internal Electric Receptacle		10 Watt moisture-proof internal electric outlet installed in chamber for optional magnetic stirrers, rocker, roller, portable shaker, etc.	
Illumination	Chamber	2 internal 12V, 10 Watt halogen lights illuminate chamber	
	Photo-synthetic	Optional for Model 42R only. Programmable Photosynthetic Light Bank with (6) 15-Watt Gro-Lux lights and an internal on-off switch	
Dimensions	Platform **	18" Wide x 18" Deep (46 x 46 cm)	
	Overall	25" Wide x 29.7" Deep x 32.2" High (62 x 75.4 x 82 cm) With door open: 51.2" [130 cm] Deep. Height stacked: 64.4" High (163.7 cm)	
	Chamber	20.4" Wide x 20.3" Deep x 18.8" High from shaker platform (51.8 x 51.6 x 47.7 cm)	
	Viewing Window	9.9" Wide x 13.6" High (25.1 x 34.6 cm) triple-pane insulated window	
Weight	Net	216 lbs. (98 kg)	266 lbs (129 kg)
Ambient Conditions		Temperature: 10°C - 35°C. Humidity: 20% to 80% non-condensing	
Certifications		cULus Meets CSA, UL & CE standards	
Warranty		Comprehensive warranty – two years on labor, three years on parts	

Shaker Capacity (Platforms Sold Separately)		
Flask Size	Dedicated Platform	Universal Platform
10 mL	N/A	109
25 mL	N/A	64
50 mL	64	45
125 mL	34	21
250 mL	25	18
500 mL	16	14
1 L	9	8
2 L	5	5
2.8 L	4	4
4 L	4	4
5 L	N/A	4
6 L	N/A	2

Platform Ordering Info	
Universal Platform ♦♦	M1250-9902
Dedicated Platforms:	
50 mL Erlenmeyer	M1194-9903
125 mL Erlenmeyer	M1194-9904
250 mL Erlenmeyer	M1194-9905
500 mL Erlenmeyer	M1194-9906
1 L Erlenmeyer	M1194-9907
2 L Erlenmeyer	M1194-9908
2.8 L Fernbach	M1233-9932
4 L Erlenmeyer	M1233-9930
Drip Pan for Univ. Plat.	M1250-9906
Utility Carrier	M1194-9909
Utility Tray	M1194-9910
Sticky Pad Platform ♦♦	M1250-9903

♦♦ Clamps and test tube racks for Universal Platform, and Sticky Pad for Sticky Pad Platform, are each sold separately. See our 24-page Innova catalog, or ask your local NBS sales rep for ordering info.

* Specifications subject to change without notice. † Maximum temperature is 60°C with optional Humidity Monitor, 70°C with optional Photosynthetic Lights. Attaining temperatures of 20°C below ambient depends on RH and other ambient conditions. Ambient is measured 1 meter from the shaker. § When stacked, maximum speed range is 400 rpm with 250/500 mL flasks; max. 300 rpm or lower with larger flasks. Speed range based on shaking a typical workload. Baffled flasks can significantly reduce maximum speed. ** Platforms sold separately.

Shaker Ordering Info **	Catalog No.	Catalog No.
Innova 42 Shaker 120 V 60 Hz	3/4" orbit: M1335-0000	1" orbit: M1335-0010
Innova 42 Shaker 230 V 50 Hz	3/4" orbit: M1335-0002	1" orbit: M1335-0012
Innova 42 Shaker 100 V 60 Hz	3/4" orbit: M1335-0001	1" orbit: M1335-0011
Innova 42 Shaker 100 V 50 Hz	3/4" orbit: M1335-0003	1" orbit: M1335-0013
Innova 42R Shaker 120 V 60 Hz	3/4" orbit: M1335-0004	1" orbit: M1335-0014
Innova 42R Shaker 230 V 50 Hz	3/4" orbit: M1335-0006	1" orbit: M1335-0016
Innova 42R Shaker 100 V 60 Hz	3/4" orbit: M1335-0005	1" orbit: M1335-0015
Innova 42R Shaker 100 V 50 Hz	3/4" orbit: M1335-0007	1" orbit: M1335-0017

More Options	
12-Port Gas Manifold ♦	M1335-0600
Humidity Monitor ♦	M1335-0500
UV Germicidal Lights ♦	M1335-0400
Culture Drawer	M1335-0501
Photosynthetic Lights, all voltages ♦ •	M1335-0300
Stacking Kit	M1335-0800
Additional Shelf & Brackets	M1335-0080
Spare Parts Kit, all voltages	M1335-6000

** Platforms sold separately. See charts above. ♦ Factory installed • Photosynthetic Lighting for Model 42R only.



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