

High-Temperature Water Bath Shakers: Innova® 3100

Superior temperature control and uniformity is assured using the Innova Model 3100. This water bath shaker is ideal for culturing a wide range of cell types at temperatures up to 100°C, as well as for staining, destaining and hybridization protocols.

- **Adjustable Level Control Automatically Replenishes Evaporated Water**, maintaining desired level without monitoring or refilling. Water-in and drain lines are each fitted with control valves to simplify cleaning, filling and complete draining.
- **Temperature Range:** 5°C above ambient to 100°C* provides for a wide range of molecular and cell biology work.
- **Temperature Precisely Controlled** within $\pm 0.1^\circ\text{C}$ from 30 - 40°C.
- **Agitation:** 25 - 400 rpm, ± 1 rpm.
- **Orbit:** $\frac{1}{2}$ " (1.3 cm) diameter orbit.

* Elevated temperatures attained with aid of an optional gable cover and with a bath liquid with a high boiling point to minimize evaporation.



Larger-capacity than many water bath shakers, the Innova 3100 easily accommodates gel trays, tubes and flasks.



Innova 3100 high-temperature water bath shaker.

- **Acceleration Circuit Builds Up Speed Gradually**, avoiding sudden starts and unwanted splashing.
- **Deep Bath with Rounded Corners and Baffles Allows Elevated Speeds** with minimal turbulence or splashing.
- **One-Piece Seamless Bath** is crevice-free, easy to keep clean; rust-resistant stainless steel.
- **Heat Loss and Evaporation Minimized** with use of optional Plexiglas or stainless-steel gable covers.

Options

- **Cooling Coil** extends the range of applications to near and below ambient conditions.
- **Gable Covers** are available to speed heat-up in high-temperature applications and to minimize evaporation.
- **Space-Saving Dolly (fits under benches and desks) and Optional Mobile Cart** are available for use where bench space is limited.

Specifications *		Innova 3100
Temperature	Range	5°C above ambient (or coolant temperatures using optional cooling coil), to 100°C †
	Accuracy &	
	Heaters	Low watt-density, silicone rubber mat heater with high-temperature safety thermostat cut off
Shaking	Range	25 to 400 rpm with 1/2" (1.3 cm) diameter circular 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	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 expired. Also signals low-water level condition. Audible alarm may be muted
LED Display		Indicates speed in increments of 1 rpm, temperature in 0.1°C, running time in 0.1 hrs., and alarm conditions. Character height: 9/16" (1.4 cm)
Recorder Output		0 - 5 volt output for tracking temperature and speed with external recorder or computer
Safety		Acceleration circuit prevents sudden starts/stops, minimizing both splashing & mechanical damage. Safety shuts off temperature when high-temperature limit is exceeded
Bath		Deep-drawn, stainless-steel, seamless bath with radius corners. Adjustable level control from 0.5" to 3" above shaker platform. Water-in and drain lines with shut-off valves and overflow line provided. (17.5" L x 13.25" W x 8" H [43 x 35 x 20 cm])
Automatic Filling		Bath automatically refillable to a volume of 15 L; requires connection to water inlet line
Setpoint Retention		All setpoints and operating status are retained by non-volatile memory. Automatic restart after power is restored (indicated by flashing display)
Electric	Service	120V 50/60 Hz; 220/230V 50/60 Hz; 240V 50/60 Hz; 100V 50/60 Hz
	Power	1,100VA
Dimensions	Platform **	12" Wide x 16.5" Deep (30.5 x 42 cm)
	Overall	17" Wide x 27.5" Deep x 14.5" High (43 x 70 x 37 cm)
Weight		105 lbs. (47.6 kg) Net; 140 lbs (63 kg) Gross
Ambient Conditions		Temperature: 0 - 60°C. Humidity: 90% non-condensing
Certifications		Meets CSA and CE standards
Warranty		Comprehensive warranty – two years on labor, three years on parts

* Specifications subject to change without notice.

† Gable Cover, (stainless steel or Plexiglas), recommended. See optional accessories chart below. Temperatures as low as -20°C attained with portable refrigeration system, cooling coil and gable cover.

§ Based on shaking a typical workload. Baffled flasks may significantly reduce maximum speed.

** Shaker platforms sold separately. See page 22.

Shaker Capacity **			
Flask Size	Ded. Platform	Univ. Platform	Half Size Platforms #
50 mL	31	18	13/ platform
125 mL	22	18	8/ platform
250 mL	13	8	5/ platform
500 mL	8	6	—
1L	6	4	—
2L	2	2	—

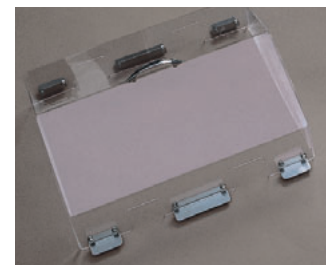
Test Tube Rack Capacity & Ordering Info (Requires a sub-platform, M1231-9999)			
Tube Size	Racks Per Bath	Tubes Per Rack	Catalog No.
13 mm Tubes	4	60	AG7-TT13
16 mm Tubes	4	36	AG7-TT16
20 mm Tubes	4	29	AG7-TT20
25 mm Tubes	4	18	AG7-TT25

** Shaker platforms sold separately. See page 22.

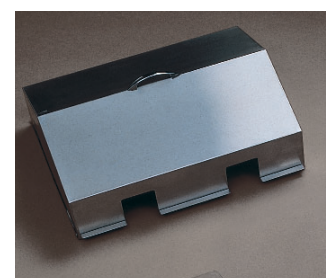
Half-size platforms require a sub-platform, M1231-9999.

Ordering Information **		Catalog No.
Innova 3100 Shaker	120 V 50/60 Hz	M1231-0000
Innova 3100 Shaker	100 V 50/60 Hz	M1231-0001
Innova 3100 Shaker	220/230 V 50/60 Hz	M1231-0002
Innova 3100 Shaker	240 V 50/60 Hz	M1231-0003
Gable Cover, Plexiglas		M1231-2010
Gable Cover, stainless steel		M1231-2000
Cooling Coil, factory-installed		M1231-9920
Spare Set of Suspension Arms		M1231-0730
Space-Saving Dolly for under lab bench operation 18" W x 28.25" L (46 x 72 cm). Height, shaker on cart: 20" (51 cm)		M1195-1020
Portable Cart 22.5" W x 32.25" L (57 x 87 cm). Height, shaker on cart: 42.5" (108 cm)		M1020-1220
Sub-Platform, one accommodates two half-size platforms or 4 racks		M1231-9999

OPTIONAL ACCESSORIES



Plexiglas Gable Cover minimizes evaporation and speeds heat-up in applications up to 60°C.



For high-temperature applications up to 100°C, choose the stainless-steel Gable Cover.



Half-size platforms, with clamps already mounted, provide maximum capacity for shaking different sized flasks on a single water bath shaker. Requires a sub-platform. (See charts below and page 22 for other platform options.)