

1.1 Specifications

<i>Innova 4230 Incubated/Refrigerated Shaker</i>		
Cabinet	Construction	Heavy gauge stainless steel
	Door	26 3/8"H x 22"W (670 mm x 559 mm)
	Double paned glass window	19 1/4"H x 11 3/8"W (489 mm x 289 mm)
	Fluorescent light	13 watt—provides illumination inside chamber
	Shelves	2 Stainless Steel 20"W x 20"L (508 mm x 508 mm)—adjustable—(1/2" (12.7 mm) centers)
	Internal AC receptacle	200W AC—waterproof w/ mating connector—can be used w/ magnetic stirrer, spinner flask, rocker, roller & shakers
Dimensions	Platform	18"W x 18"L (457 mm x 457 mm)
	Overall†	24.4"W x 28.7"L x 36.4"H (620 mm x 729 mm x 925 mm)
	Chamber	20 1/2"W x 20 1/2"L x 24.8"H (520 mm x 520 mm x 630 mm)
Electrical		1500 Watts—120/100/200/240V—50/60 Hz
Indicator		3 digit LED
Refrigeration		1/5 HP uses CFC-Free (R134A) Refrigerant
Recorder Output		Two 0-5 Volt—tracks temperature & speed w/ optional recorder
Shaking	Alarm	Audible & visible indicates when speed deviates ±5 rpm—audible alarm can be deactivated
	Control	±1 rpm—acceleration control minimizes splashing caused by sudden starts and stops
	Display	1 rpm increments
	Drive	Triple-eccentric counterbalanced drive w/ 9 sealed for life, ball bearings
	Motion	3/4"(19 mm) circular—standard 1"(25.4) optional
	Motor	1/15 HP, 3-phase solid-state, brushless ball bearing DC motor
	Range	25–400 rpm, 25–300 rpm for stacked unit
	Hour Timer*	Programmable shaking continuous → 99.9 hours—setable in 0.1 hr. increments—alarm sounds at end of shaking period
Safety	Automatic restart	Setpoints & operating status retained by non-volatile memory—auto restart after power is restored
	Door interlock	Shaker shuts off when door is open
	Unbalanced/ overload sensor	Limits speed automatically when unbalanced or overload condition is detected
	Chamber temperature	Heater shuts off if temperature exceeds operating range

† 51.2 (130 cm) front to back w/ door open

* this simple timer is accessed through the control panel keypad; there is also an electronic timer which can be programmed with multiple instructions (see Section 4.3 and Chapter 7 for details)

<i>Innova 4230 Incubated/Refrigerated Shaker</i>		
Options	Photosynthetic light bank	Provides light that follows the photosynthetic curve of photosynthetic organisms
	Electronic Timer	Programmable to turn shaker on & off and to switch between two temperature setpoints. Multiday or cyclic programming.
	Stacking kit	Provides stacking for up to 2 Innova 4230 shakers
Temperature	Alarms	Audible & Visual—when temperature deviates > 1.0°C—audible alarm can be deactivated
	Ambient	15–35°C/Humidity—up to 90% non-condensing
	Control	±0.1°C—alternation between two setpoints programmable via electronic timer
	Heaters	Resistance w/ high temperature safety cutoff
	Range	20°C below ambient with a minimum of 4°C to maximum of 75°C for 50 Hz units or 80°C for 60 Hz units
	Refrigeration	1/5 HP/CFC-Free (R134A) Refrigerant
Weight	Uniformity	±.3°C NOM.
	Net	300 lb. (136 kg.)
	Gross	360 lb. (163 kg.)

**CAUTION!**

Do not set the temperature above 75°C for 50 Hz units or 80°C for 60 Hz units.