

# MULTITRON II

With ATR you have OPTIONS...



Humidity  
CO2 Control

Lighting  
Refrigeration  
Micro-Option  
Slide-out Shelf



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The Multitron II is a large capacity incubator shaker. Multitron II may be configured as a single unit, or stacked as doubles or triples. The units allow for the optimum configuration in a limited space. The ingenious design of the INFORS shakers features a front-loading, pullout platform, stainless interior, a panoramic front window and inspection light. The patented drive provides uniform motion and quiet operation without vibration. The sealed cabinet ensures fast and accurate heating. Refrigeration, humidity and CO<sub>2</sub> are available as optional controls.

## Operation

Each unit has a control panel with a splashproof keypad and LED display. A comfortable working height on each unit allows easy access to setpoints, on/off control and program cycles (day/night simulations). The display alternates between the actual values of temperature and speed while the unit is operating.

Microprocessor technology and PID control guarantee the precise maintenance of setpoints. The machine will resume operation each time the door is closed or following a power failure. Whenever the door is opened, a brake is applied to the shaker drive and the circulation fans are switched off. The platform is released when the door is fully opened.

The Multitron II shaker comes standard with built-in alarm relay contacts and the ability to interface directly to a computer via a RS-232 port (special software is required). Optional accessories may be purchased to allow the Multitron II to transmit data in the form of analog voltage or current signals to a remote monitoring station.

## Construction

Multitron II incubator shakers are each equipped with an independent control and power system mounted on the front of each cabinet. Stacking cabinets allows each cabinet to control any cabinet in the stack while still maintaining independent control and power. Control parameters are speed, temperature, lights, humidification, CO<sub>2</sub>, and RS232 output. Single cabinets can be bench mounted or supplied with a fixed base support for future stacking. An 18" storage base can be used for single and double cabinets. It has the advantage of providing both a comfortable working height and space for storing clamps or trays.

The fully insulated incubation chamber has powerful fans mounted along the top of the back wall. This unique placement provides better temperature accuracy and uniformity.

Cooling can be fitted on any unit in a stacked system. Top or side mounted conventional refrigeration or rear mounted thermo-electric cooling can be specified depending on space limitations, ambient temperature and end temperatures requirements.

Lighting, CO<sub>2</sub> and humidity, as options, may be installed in any cabinet. Lighting requires cooling for stable temperature control.

The Multitron II can have a 25 mm or 50 mm diameter orbit\* (or throw) to optimize the oxygen transfer rate for different sized flasks.

Speed control ranges between 20 and 400 rpm. Cabinet location, throw, and the size of flasks determine maximum speed.

The sealed cabinet base is equipped with a drain fitting for complete containment of spills. The drive motor is located outside the cabinet to protect it from spills and corrosion. The inspection light is provided on the cabinet. Activated by pressing any key on the front panel, this allows you to see the contents of the shaker without opening the door.



\*A 3mm orbit (or throw) with maximum 1000 rpm is available for growing in microtiter plates.

## Capacity

The Multitron II platform slides out over the door for easy loading and unloading. It automatically locks in place when pushed back into the chamber. The tray at 33.5" x 18.5" holds more flasks than standard shakers. Universal trays fit all flask sizes. Dedicated trays accommodate the largest number of flasks. With clamps flasks up to 6 liters may be used. The Multitron II can double as a static incubator with the removable slide-out shelf available as an option. When in place the slide-out shelf option limits the flask height to 12 inches.



As an alternative to the traditional clamp style platform INFORS offers an adhesive material platform of "Sticky Stuff" for maximum flexibility. "Sticky Stuff" holds all flat bottom vessels securely at high shaking speeds. Six liter flasks of 370mm or less may be used with the "Sticky Stuff" platform. Flask removal is easy when instructions are followed. "Sticky Stuff" can be rejuvenated by simply washing with water and then allowing the platform to dry. Customers can request combination platforms of "Sticky Stuff", flask clamps and tube racks.

## External Dimensions and Weight

Single Unit	21" (H) x 42" (W) x 34" (D)	Wt. 195 lbs.
Double stack	49" (H) x 42" (W) x 34" (D)	Wt. 390 lbs.
Triple stack	69" (H) x 42" (W) x 34" (D)	Wt. 585 lbs.
Triple w/ top cooling	80" (H) x 42" (W) x 34" (D)	Wt. 695 lbs.
Units w/ side cooling	as above except 56" (W)	add 40 lbs / cabinet
	(Allow 4 - 6" clearance around the side cooler for air circulation)	

## Specifications

<b>Drive:</b>	Brushless AC induction motor with drive belt
<b>Shaking Speed:</b>	20 to 400 rpm
<b>Orbital Throw:</b>	3 mm, 12 mm, 19 mm, 25 mm, and 50 mm diameter
<b>Accuracy:</b>	± 1% at maximum speed
<b>Temperature Range :</b>	5°C above ambient to 65°C without cooling 15°C below ambient to 65°C with cooling
<b>Accuracy:</b>	± 0.2 °C (Pt 100 sensor)
<b>Temperature Uniformity:</b>	± 0.5 °C over working surface
<b>Air Circulation:</b>	210 CFM (360 m <sup>3</sup> /h)
<b>Data Interface:</b>	RS232 bi-directional
<b>Power Supply:</b>	115V @ 60 Hz standard cabinet 9 Amps w/ cooling & lighting 13 Amps

# MULTITRON II



Models	Individual Options
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<p><b>Master Unit, 3 mm</b>                    <b>AJ103</b></p> <p><b>Master Unit, 12 mm</b>                <b>AJ112</b></p> <p><b>Master Unit, 19 mm</b>                <b>AJ119</b></p> <p><b>Master Unit, 25 mm</b>                <b>AJ125</b></p> <p><b>Master Unit, 50 mm</b>                <b>AJ150</b></p> <p><b>Base</b></p> <p>Trolley                                    <b>ZM101</b></p> <p>Support 6"                                <b>ZM106</b></p> <p>Storage Base 18"                       <b>ZM118</b></p>	<p><b>Cooling System</b></p> <p>Cooling in side box                    <b>ZK120</b></p> <p>Peltier cooling                            <b>ZKPC</b></p> <p>Casing w/cooling                       <b>ZK110</b></p> <p>Storage Base w/ one cooling unit      <b>ZK118</b></p> <p><b>Growth Lighting</b>                      <b>ZL111</b></p> <p><b>Static Shelf</b></p> <p>Removable Shelf for Incubation      <b>SS110</b> of Petri Dishes etc.</p> <p><b>Humidity Control</b>                      <b>HC110</b></p> <p><b>CO<sub>2</sub> Control</b>                            <b>CO110</b></p>
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Fixed Trays and Clamps	Additional Accessories
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<p><b>Universal Tray with threaded holes</b>                    <b>ATM0</b> For attaching all types of Infors clamps, test tube racks, etc.</p> <p><b>Dedicated Trays</b> Fitted with clamps for one size of Erlenmeyer flasks.</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td><b>ATM50</b></td><td style="text-align: center;">50 mL</td><td style="text-align: center;">131 clamps</td></tr> <tr><td><b>ATM100</b></td><td style="text-align: center;">100 mL</td><td style="text-align: center;">87 clamps</td></tr> <tr><td><b>ATM250</b></td><td style="text-align: center;">250 mL</td><td style="text-align: center;">48 clamps</td></tr> <tr><td><b>ATM500</b></td><td style="text-align: center;">500 mL</td><td style="text-align: center;">31 clamps</td></tr> <tr><td><b>ATM1000</b></td><td style="text-align: center;">1000 mL</td><td style="text-align: center;">18 clamps</td></tr> <tr><td><b>ATM2000</b></td><td style="text-align: center;">2000 mL</td><td style="text-align: center;">13 clamps</td></tr> <tr><td><b>ATM4000</b></td><td style="text-align: center;">4000 mL</td><td style="text-align: center;">8 clamps</td></tr> </table> <p><b>Additional Clamps</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr><td><b>ATK25</b></td><td style="text-align: center;">25 mL clamp</td></tr> <tr><td><b>ATK50</b></td><td style="text-align: center;">50 mL clamp</td></tr> <tr><td><b>ATK100</b></td><td style="text-align: center;">100 mL clamp</td></tr> <tr><td><b>ATK250</b></td><td style="text-align: center;">250 mL clamp</td></tr> <tr><td><b>ATK500</b></td><td style="text-align: center;">500 mL clamp</td></tr> <tr><td><b>ATK1000</b></td><td style="text-align: center;">1000 mL clamp</td></tr> <tr><td><b>ATK2000</b></td><td style="text-align: center;">2000 mL clamp</td></tr> <tr><td><b>ATK3000</b></td><td style="text-align: center;">3000 mL clamp</td></tr> <tr><td><b>ATK4000</b></td><td style="text-align: center;">4000 mL clamp</td></tr> <tr><td><b>ATK5000</b></td><td style="text-align: center;">5000 mL clamp</td></tr> <tr><td><b>ATK6000</b></td><td style="text-align: center;">6000mL clamp</td></tr> </table>	<b>ATM50</b>	50 mL	131 clamps	<b>ATM100</b>	100 mL	87 clamps	<b>ATM250</b>	250 mL	48 clamps	<b>ATM500</b>	500 mL	31 clamps	<b>ATM1000</b>	1000 mL	18 clamps	<b>ATM2000</b>	2000 mL	13 clamps	<b>ATM4000</b>	4000 mL	8 clamps	<b>ATK25</b>	25 mL clamp	<b>ATK50</b>	50 mL clamp	<b>ATK100</b>	100 mL clamp	<b>ATK250</b>	250 mL clamp	<b>ATK500</b>	500 mL clamp	<b>ATK1000</b>	1000 mL clamp	<b>ATK2000</b>	2000 mL clamp	<b>ATK3000</b>	3000 mL clamp	<b>ATK4000</b>	4000 mL clamp	<b>ATK5000</b>	5000 mL clamp	<b>ATK6000</b>	6000mL clamp	<p><b>Universal with sticky stuff</b>                    <b>ATM00</b> For flasks, bottles or any container with a wide, flat base.</p> <p><b>Microtiter Plate Tray</b>                                    <b>ATMplate</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr><td><b>IN63240</b></td><td style="text-align: center;">8" Green Sticky Square (8 per tray)</td></tr> <tr><td><b>ATKF2</b></td><td style="text-align: center;">1.8L Fernbach</td></tr> <tr><td><b>ATKF3</b></td><td style="text-align: center;">2.8L Fernbach</td></tr> <tr><td><b>ATKF3C</b></td><td style="text-align: center;">3.0L Corning™</td></tr> </table> <p><b>Tube Racks</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr><td><b>ATR 08</b></td><td style="text-align: center;">Tube rack 144 x 8 mm</td></tr> <tr><td><b>ATR 10</b></td><td style="text-align: center;">Tube rack 100 x 10 mm</td></tr> <tr><td><b>ATR 12</b></td><td style="text-align: center;">Tube rack 72 x 12 mm</td></tr> <tr><td><b>ATR 14</b></td><td style="text-align: center;">Tube rack 64 x 14 mm</td></tr> <tr><td><b>ATR 16</b></td><td style="text-align: center;">Tube rack 42 x 16 mm</td></tr> <tr><td><b>ATR 18</b></td><td style="text-align: center;">Tube rack 39 x 18 mm</td></tr> <tr><td><b>ATR 20</b></td><td style="text-align: center;">Tube rack 36 x 20 mm</td></tr> <tr><td><b>ATR 22</b></td><td style="text-align: center;">Tube rack 33 x 22 mm</td></tr> <tr><td><b>ATR 25</b></td><td style="text-align: center;">Tube rack 20 x 25 mm</td></tr> <tr><td><b>ATR 30</b></td><td style="text-align: center;">Tube rack 15 x 30 mm</td></tr> </table>	<b>IN63240</b>	8" Green Sticky Square (8 per tray)	<b>ATKF2</b>	1.8L Fernbach	<b>ATKF3</b>	2.8L Fernbach	<b>ATKF3C</b>	3.0L Corning™	<b>ATR 08</b>	Tube rack 144 x 8 mm	<b>ATR 10</b>	Tube rack 100 x 10 mm	<b>ATR 12</b>	Tube rack 72 x 12 mm	<b>ATR 14</b>	Tube rack 64 x 14 mm	<b>ATR 16</b>	Tube rack 42 x 16 mm	<b>ATR 18</b>	Tube rack 39 x 18 mm	<b>ATR 20</b>	Tube rack 36 x 20 mm	<b>ATR 22</b>	Tube rack 33 x 22 mm	<b>ATR 25</b>	Tube rack 20 x 25 mm	<b>ATR 30</b>	Tube rack 15 x 30 mm
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