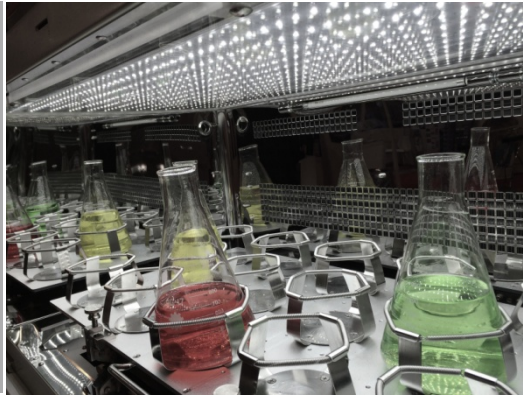


# Ultimate-Cell Stackable Shaking Incubator

- **ACCURACY**
- **RELIABILITY**
- **FLEXIBILITY**



2020 Version

ZWYC-290A

## INTRODUCTION

Thanks to the ongoing development of both technology and functionality requirements from our industry, Labwit has been thriving to innovate and is now able to offer our latest and comprehensive solution for microbial, mammalian and plant cell incubation needs, the inspiring ZWYC-290A Ultimate-cell Stackable Shaking Incubator.

The spaces in the labs are spacious and expensive, The ZWYC-290A can be stacked up to 2-3 units high to offer multiplied incubation capacity on a single unit footprint. Stacking also can be easily managed at a later time. Each compartment unit operates independently with cooling as standard, and can be upgraded with modular controlling options of LED photosynthetic lighting control, active humidity control, CO<sub>2</sub> concentration controls.

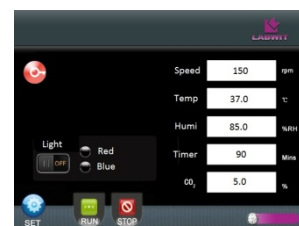
## FEATURES

### Intuitive Touch Screen Panel

**Integrated:** Comprehensive information available at fingertips. The screen panel clearly indicates all basic operational parameters, such as temperature, speed and timer; as well as the optional parameters, for example, humidity level, and CO<sub>2</sub> concentration just in one page.

**User friendly:** Graphic user interface, easy to operate with icons and prompts, which makes it easy change the operating parameters settings, even those multi set points under programmable mode intuitively.

**Intelligent:** Self diagnostic alarm system monitors all functions and parameters and prompts in case of errors, which are clearly indicated in the touch screen panel.



Touch Screen Control Panel

### Direct Beltless Driving System

Innovated direct beltless driving system ensures smooth and reliable orbital shaking movement with a speed between 30-300rpm, even when there is imbalanced or maximum loading on the shaking platform. To achieve the maximized flexibility for all applications requiring optimized oxygen transfer rate, the shaking diameter can be steplessly adjusted from 1-50mm. Long life brushless motor provides consistent and no vibration shaking motion, maintenance free and low heat emissions.



### Excellent Temperature Controlling System

New solid polyurethane casing optimizes the insulation of the chamber, Together with the sound air circulation system and PID controller ensures evenly distributed air flow as well as accurate and uniformed temperature control across the chamber.

Sound cooling system with CFC free refrigerant and automatic defrosting system ensures long term stable operation at as low as 4°C, or 20°C lower than ambient.

Microprocessor Controller provides unmatched versatility by enabling users to create personalized program (with up to 9 segment, with cycles) to automate changes to function parameters.



Sound Forced Convention System

### Extended Chamber Capacity

The chamber is one of the biggest of its range and can take up to 32 pieces of 500ml Erlenmeyer flasks while the plain shaking tray (#P6023) and sticky mats are used. Moreover, the traditional predrilled shaking tray (#P6022) with dedicated holes for fixing flask clamps are also available.

With extended effective inner height as 425 mm, the unit chamber is always compatible with 5000ml flasks even when the photosynthetic LED lighting is equipped. The maximum capacity for various Erlenmeyer flask clamps is shown below,



	P8021	P8022	P8023	P8024	P8026	P8027	P8028	P8029	P8012	P8010
	50ml	100ml	250ml	500ml	1000ml	2000ml	3000ml	5000ml	96 Well Plate	Tube Rack
P6023 Tray	98	72	50	32	18	11	8	6	24	8
P6022 Tray	91	70	40	26	15	11	8	5	15	8

### Direct Injection Humidification System

Humidity is important for long term cell cultivations with flasks as well as when micro plates are used. Active controlled humidification system can effectively reduce evaporations during cultivation, hence, preventing the samples from drying out.

The humidification system of Ultimate-cell features 140°C steam direct injection into the chamber and active PID control with world class humidity sensor for utmost accuracy of measurement.

### Advanced CO<sub>2</sub> controlling with Infrared (IR) sensor

The effective controlling of CO<sub>2</sub> concentration is essential for cultivations of mammalian cells and algae. The CO<sub>2</sub> concentration is well maintained between 0-20% to keep the pH value of the solution media at healthy level.

Labwit incorporates a world class single beam, dual wavelength IR CO<sub>2</sub> sensor, which guarantees superior performance and accuracy to the situations where temperature and humidity fluctuate rapidly, such as when the door is opened frequently.

### Photosynthetic LED Lightings

Ultimate-cell can be equipped with LED lighting panel for the cultivation of those phototrophic organisms, such as plant culture, algae, etc. Light panels available in warm white and blue & red, with light intensity up to 400  $\mu\text{mol}/(\text{m}^2 \cdot \text{s})$ . Even light distributions over the shaking tray. Easy programmable for day and night simulations. With height of 10mm, the light panel minimizes the impact on the useable internal height above the shaking tray.

### Contamination Control

UV Sterilization. The UV sterilization system is isolated from the samples, sterilizes chamber air in the back chamber wall to maintain contamination-free conditions within the chamber.

Easy Cleaning Chamber. The chamber bottom is designed to catch and drain excess water and liquid spills in case of flask breaks through an outlet on the side.

### Password Door Lock System

Password screen prevents unauthorized changes of operational parameters as well as access to the valuable samples during long terms cultivation, enhancing the safety and reliability of the applications.

### Complete Protection For Cell Culture

This model has been designed to include many features for the comprehensive of the application and the sample safety, hence providing you with added peace of mind.

- The Integrated fingerprint encrypted system protects specious cell cultures from unauthorized access.
- Automatic stop shaking motion and heating when the door is opened.
- Sensor failure alarm.
- Over-current and leakage protection.
- Non-volatile memory guarantees data integrity in the event of power interruption.
- Audible and visual alarm when parameter deviates from the set point.
- Independent temperature limit protection against over temperature.

### Other Features

- Internal chamber equipped with lighting ensure complete visibility.
- Fully insulated chamber and door with double folded glass window optimize the energy efficiency
- 2pcs of  $\Phi 50\text{mm}$  access ports
- One piece of predrilled shaking tray included as standard, clamps excluded.
- Base Options: 35cm cabinet base stand; 50cm Frame base stand



Humidity Sensor



CO2 Sensor



Photosynthetic Lighting



Drain Outlet



UV Light

## SPECIFICATIONS:

<b>Machine</b>		<b>Humidifier Power</b>	400W	
<b>Outside (WxDxH)</b>	1320x870x590mm (Side Cooling)*	<b>Recovery (@70%RH)</b>	10 mins (30 Seconds Door Opening)	
<b>Inside (WxDxH)</b>	940x570x480mm	<b>Shaking Unit</b>		
<b>Volume</b>	257L	<b>Drive Type</b>	Quin Drive System	
<b>Weight (with Cooling)</b>	200kg	<b>Tray Size</b>	850x450mm	
<b>Control Panel</b>	TFT Touch Screen	<b>Maximum Load</b>	25kg	
<b>Illumination</b>	Halogen	<b>Speed Range</b>	30-300 rpm	
<b>Language</b>	English	<b>Speed Accuracy</b>	±1 rpm	
<b>Ambient TEMP.</b>	5-35°C	<b>Timer</b>	0-9999 mins	
<b>UV Light</b>	≥400 mW/m <sup>2</sup>	<b>Shaking Mode</b>	Orbital	
<b>Noise Level</b>	<70 dB (1m above floor)	<b>Shaking Diameter</b>	1-50mm Stepless Adjustment	
<b>Power</b>	1150W	<b>CO<sub>2</sub></b>		
<b>Electricity</b>	AC 220-240 Volt, 50/60Hz	<b>Principle of Sensor</b>	Infared, NDIR	
<b>Temperature</b>		<b>CO<sub>2</sub> Range</b>	0-20%	
<b>Control Mode</b>	Fixed Value & Program	<b>CO<sub>2</sub> Accuracy</b>	±0.15 @ 5.0%	
<b>TEMP. Range</b>	Ambient-15 to 60°C (Min. 4°C)#	<b>Temperature Range</b>	25-55°C	
<b>TEMP Accuracy</b>	0.1°C	<b>CO<sub>2</sub> Recovery (@5%)</b>	5 mins (30 Seconds Door Opening)	
<b>TEMP. Uniformity</b>	±0.5°C @37°C	<b>Photosynthetic Lighting</b>		
<b>Principle of Sensor</b>	PT100	<b>Light Type</b>	LED, 50% Red, 50% Blue	LED, 100% Warm White
<b>Air Circulation</b>	360m <sup>3</sup> /Hour	<b>Spectrum</b>	Red: 640-660nm, Blue: 430-450nm	4500k:400-700nm
<b>Recovery (@37°C)</b>	10 mins (30 Seconds Door Opening)	<b>Light Intensity</b>	Up to 700 μmol/(m <sup>2</sup> *s)	Up to 400 μmol/(m <sup>2</sup> *s)
<b>Humidity</b>		<b>Control</b>	Yes, Individually, from 0-100% output	
<b>HUMI. Range</b>	40-80%RH, at 25-55°C	<b>Control Mode</b>	Fixed Value & Programmable	
<b>HUMI. Accuracy</b>	0.1%RH	<b>Dimensions (WxDxH)</b>	890x500x10mm	
<b>HUMI. Uniformity</b>	±3%RH	<b>Power</b>	300W	
<b>Principle of Sensor</b>	Capacitive	* Without side cooling: 1080*870*590mm		
<b>System</b>	Direct Steam Injection	# Min. 15°C when Photosynthetic Lighting option is applied.		

## ORDERING INFORMATION:

Part NO.	Description	Part NO.	Description
ZWYC-290A	257Lx1, Ultimate-Cell Stackable Shaking Incubator, 4-60, 30-300rpm	P8012	Clamp for 96 Well Plate, S/S
P5011W	LED Lighting Panel, For ZWYC-290A, White	P8017	Sticky Mat, 20 x 20cm
P5011RB	LED Lighting Panel, For ZWYC-290A, Red & Blue	P8021	O Clamp, S/S, for 50ml Flask, with Spring Retainer
P5012-35	Cabinet Base Stand for ZWYC-290A, H35cm	P8022	O Clamp, S/S, for 100ml Flask, with Spring Retainer
P5012-50	Frame Base Stand for ZWYC-290A, H50cm	P8023	O Clamp, S/S, for 250ml Flask, with Spring Retainer
P5013	Direct Steam Humidification Kit for ZWYC-290A	P8024	O Clamp, S/S, for 500ml Flask, with Spring Retainer
P5014	IR CO <sub>2</sub> Kit for ZWYC-290A	P8025	O Clamp, S/S, for 750ml Flask, with Spring Retainer
P5016	RS-485 Interface	P8026	O Clamp, S/S, for 1000ml Flask, with Spring Retainer
P5016	Fingerprint Encryption System for ZWYC-290A	P8027	O Clamp, S/S, for 2000ml Flask, with Spring Retainer
P6022	Tray for ZWYC-290A, Predrilled	P8028	O Clamp, S/S, for 3000ml Flask, with Spring Retainer
P6023	Tray for ZWYC-290A, Plain	P8029	O Clamp, S/S, for 5000ml Flask, with Spring Retainer
P8010	Tube Rack S/S	※ S/S: Stainless Steel	

Labwit quality assurance program demands the continuous assessment and improvement of all Labwit products. Information in this leaflet could thus change without notification and does not constitute a product specification. Please contact Labwit or their representatives if you require more details

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