LABWIT®

The Paradigm Shift in Cell Culture

ZWYC-240B Ultra Elite: Core Architecture & Innovation Guide



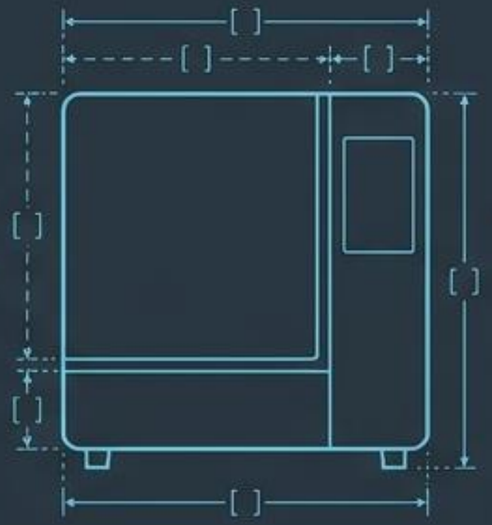
PRECISION. PERFORMANCE. PURITY.

Advanced Thermal Engineering

Solid-state Peltier technology replacing bulky compressors.

Spatial Geometry

Disruptive 42.9% tray-to-footprint ratio multiplying benchtop yield.



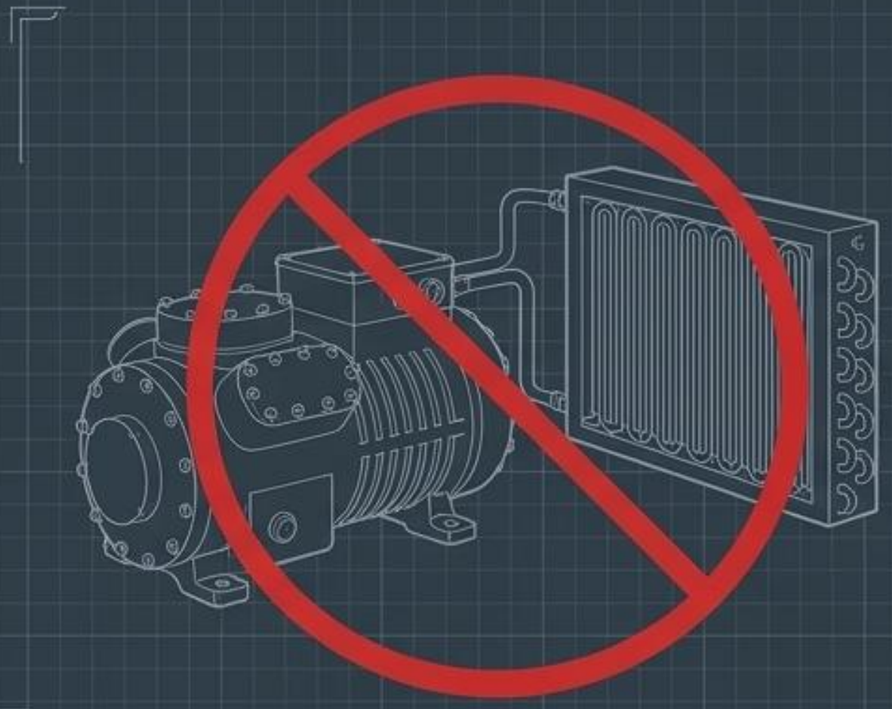
Digital Compliance

Unbreakable 21 CFR Part 11 audit trails and multi-level security.

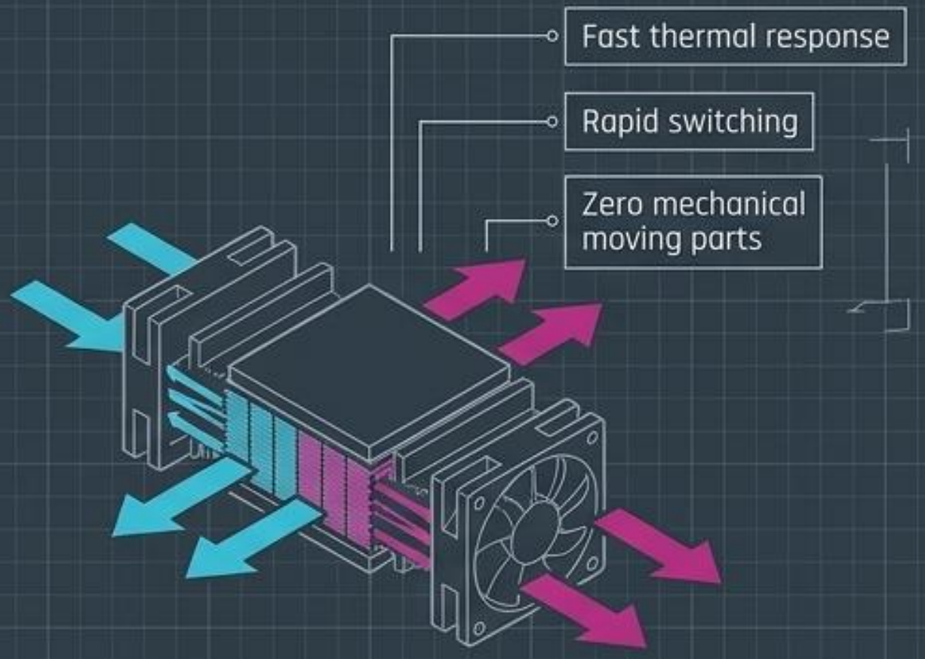
Mechanical Stability

Beltless, high-torque FOC Magnetic Drive system.

Core Insight: The ZWYC-240B is specifically engineered for high-stakes research in synthetic biology and microbial cultivation, fundamentally removing legacy constraints.



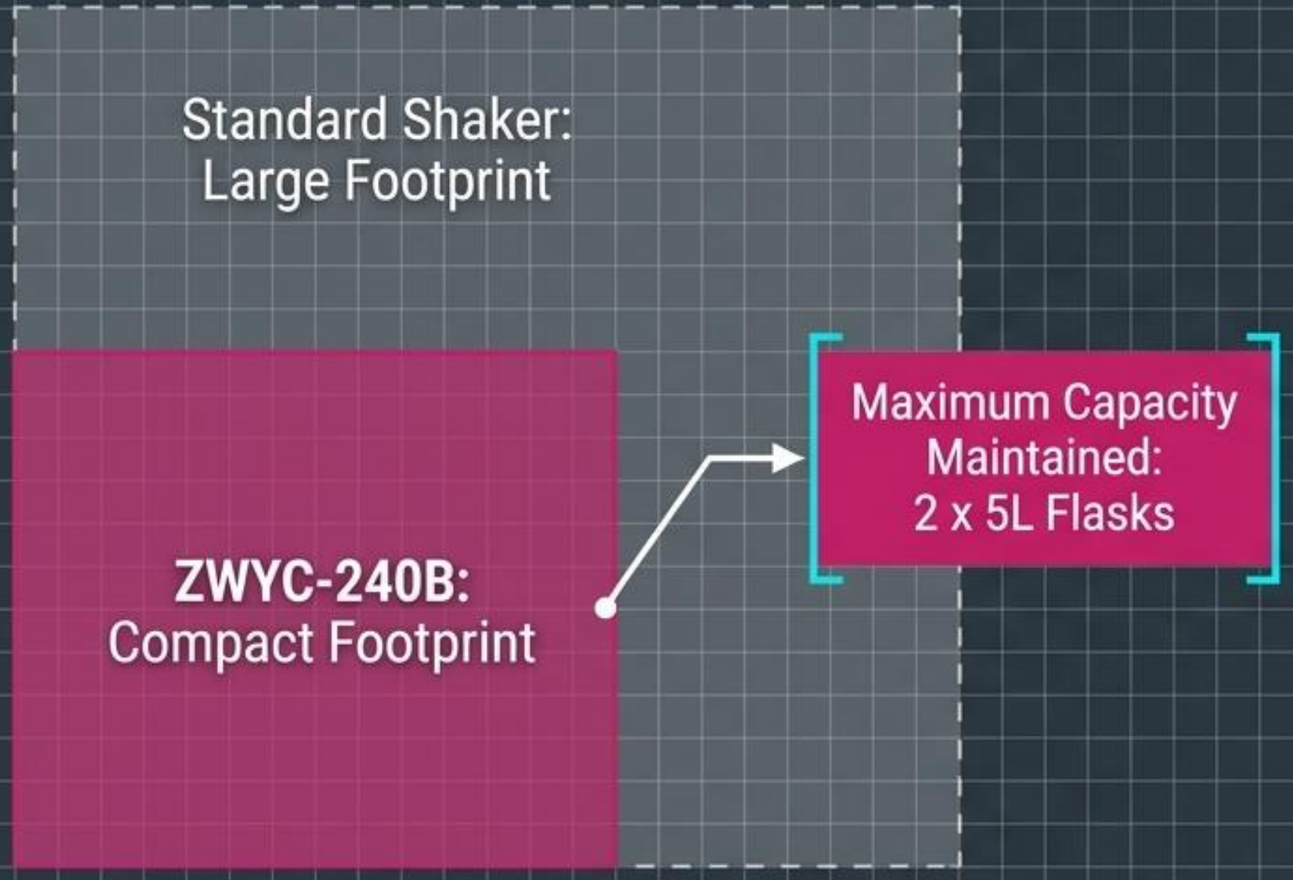
70%
Energy Savings



The Old Way:
Bulky Refrigeration & Resistance Heating Coils.

The New Way:
Advanced Solid-State Peltier Architecture.

The Cell Benefit: Zero Vibration. Semiconductor technology eliminates mechanical compressor vibration at the source, providing an undisturbed, tranquil environment for highly sensitive cell lines.



Tray-to-Footprint Yield Ratio	
Labwit ZWYC-240B:	42.9%
Radobio MS86:	40.1%
Crystal IS-DA:	36.3%
Infors-HT Minitron:	32.8%

Extreme Focus: By utilizing a fixed 25mm eccentric mechanism, the 240B achieves unmatched spatial efficiency—reclaiming vital laboratory real estate while supporting double-stacking.

Digital Compliance: GMP & 21 CFR Part 11 Audit Ready



Massive Capacity

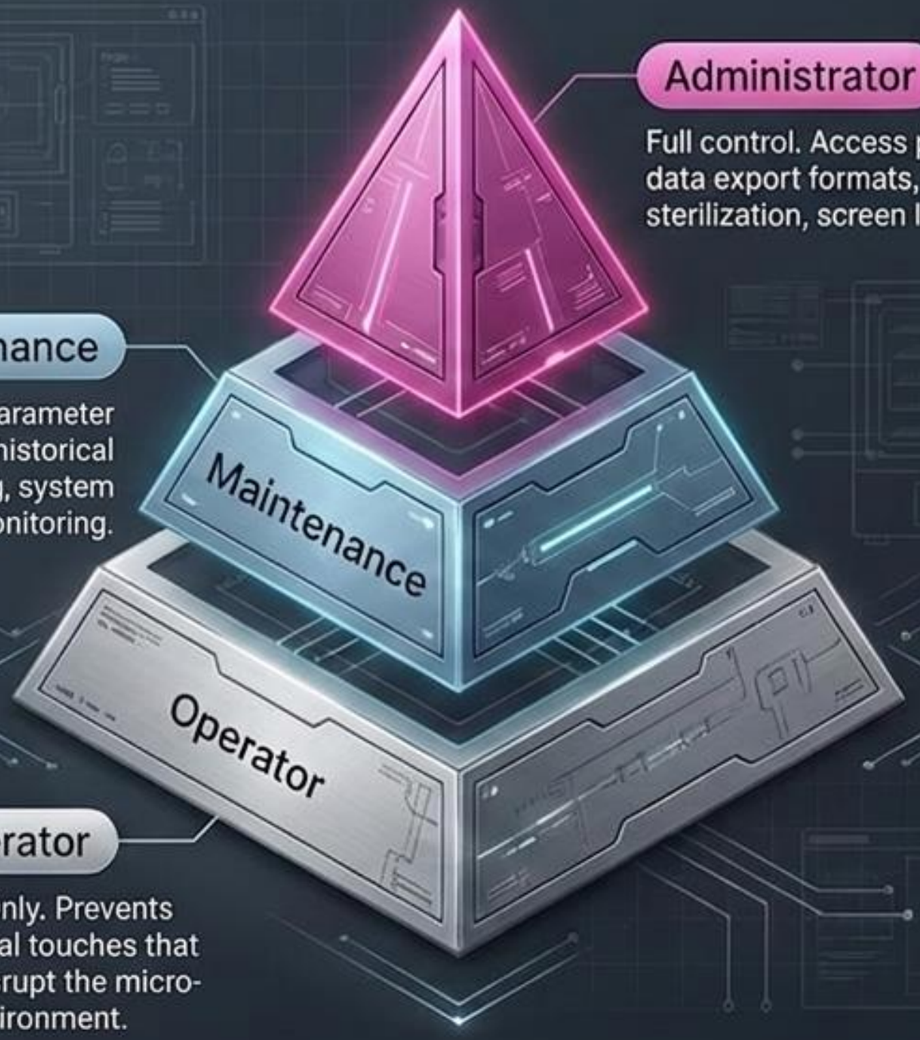
Up to 10 Years / **10 Million** Records.

Administrator

Full control. Access permissions, data export formats, UV sterilization, screen locks.

Maintenance

Operational parameter setting, historical curve viewing, system log monitoring.



Operator

View Only. Prevents accidental touches that could disrupt the micro-environment.



Unbreakable Audit Trails:

Exports complete, non-editable PDF/CSV trails with timestamps directly via USB. Fully GMP & 21 CFR Part 11 Audit Ready.



High-Torque FOC Magnetic Drive

Beltless, pulley-free design ensuring smooth, whisper-quiet operation (<55dB) with zero heat transfer to the chamber.

Classic Three-Axis Eccentric Mechanism

Delivers stable, uniform orbital agitation (Fixed 25mm orbit) with speeds from 2–300 rpm (±1 rpm accuracy).

Programmable Rotation

Supports Forward, Reverse, and Alternating rotation modes over 100 customizable segments.

Engineered for Cleanliness & Purity



The Double-Layer Glass Door

Single-piece glass inner door with double-layer insulation. Prevents condensation and eliminates screw/rivet dead zones.



UV Sterilization System

Built-in 8W programmable UV lamp interlocked with the door switch for safe, pre/post-cycle sterile environments.

Chamber Specs: High-Grade #304 Stainless Steel

Fully rounded corners with a waterproof isolation structure and bottom drain valve, allowing direct water rinsing and eliminating biological dead zones.



DIAGNOSTIC CHECKLIST

[System]	Auto-restart with non-volatile memory after power failures.
[Mechanical]	Active braking engaged instantly upon door opening.
[Electrical]	Independent leakage and over-current protection.
[Monitoring]	Visual and audible alarms for high/low parameter deviations and sensor faults.
[Access]	Physical door lock preventing unauthorized interruption.

Designed with a 'Fail-Safe' philosophy. The system monitors itself so researchers can focus entirely on the science.

Dual-Zone Cultivation: Expanding Experimental Flexibility

The height-adjustable static shelf allows for simultaneous shaking and static microbial cultivation within the exact same highly-controlled micro-environment.

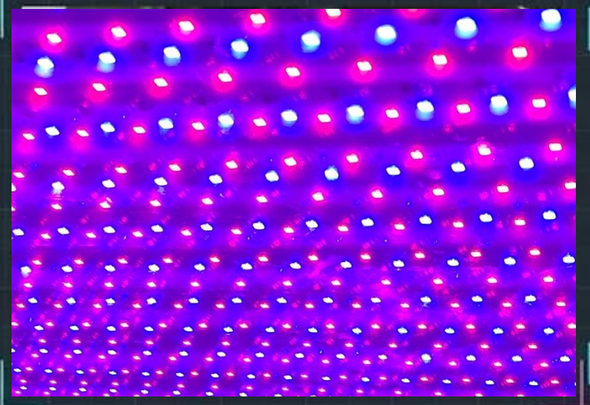
Leveraging the 120L chamber volume to accommodate maximum active yields below while running parallel static controls above.



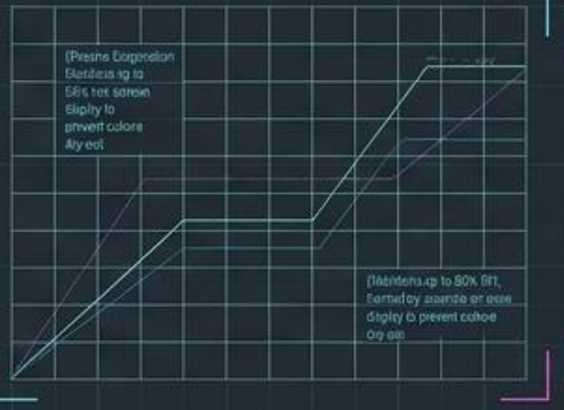
Extensive Customization Ecosystem



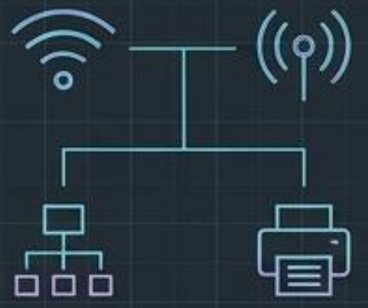
[Active CO2 Control]
0–20% range using imported high-precision infrared sensors (±0.2% accuracy).



[Photosynthetic LED Lighting]
Programmable 0-100% intensity available in Red, Blue, and Warm White spectra.



[Passive Evaporation Tray]
Maintains up to 80% RH, tracked by accurate on-screen display to prevent culture dry-out.



[Digital Integration]
Wi-Fi connection kits, TCP/IP Modbus protocol, and built-in micro-printer for real-time external data routing.

Selection Diagnostic: Matching Your Laboratory's Ultimate Constraint

What is your laboratory's primary constraint?

Pursuing extreme parameters and complex variables?

Need rigorous active steam humidity and stepless 1-50mm amplitude adjustment?

Choose **ZWYC-293G**:
The Mature Micro-Environment Master.

Space-constrained?

Cells highly sensitive to mechanical vibration?

Require strict GMP / 21 CFR Part 11 unbreakable audit trails?

Choose **ZWYC-240B**:
The Efficiency & Compliance Pioneer.

No matter the demand, Labwit delivers the optimal solution.

The Master Matrix

Thermal Architecture	Solid-State Peltier (250W) ✓
Temp Range / Uniformity	4°C - 60°C / ±0.5°C (@37°C)
Drive System	Beltless FOC Magnetic Drive ✓
Speed / Orbit	2–300 rpm (±1 rpm) / 25mm Fixed
Footprint / Max Capacity	0.389 m² / 2 x 5L Flasks (Max Load: 16kg) ✓
Digital Permissions	3-Level Hierarchy, 21 CFR Part 11 Ready ✓
Chamber Dimension / Weight	120L / 82 kg Net

ZWYC-240B: Redefining the limits of precision cell culture on the benchtop.