

Configuration



Technical Specifications

CellKeeperII 48 Plus		Product Number : ICCS-48-ME2-002
General Specifications	External Dimensions (W × D × H) (mm) *Excluding protrusions	852 × 917.5 × 1,900
	Weight (approx.)	600 kg
	Throughput	Over 16 ea/hr (using Φ10 cm dishes*)
CO ₂ Incubator Module	Compatible Vessel Type	6 well plate~96 well plate: 48 ea Φ6 cm dish*: 96 ea, Φ10 cm dish*: 48 ea
	Temperature	RT. +7~50 °C
	Temperature Accuracy	37 ± 0.5 °C (at 25 °C)
	CO ₂ Concentration	0~20% (at 5% ± 0.5%)
	Dry Heat Sterilization	125 °C, 6 hr (automatic operation)
	Safety Mechanism	Door interlock (unlocks below 55 °C during dry heat sterilization)
Medium Exchange Module Medium Cooling Unit	Storage Temperature	2~8 °C
	Storage Volume	2 L
Dispense Unit	Channel Numbers	4 Channel
	Dispense Temperature	RT. +7~40 °C
	Dispense Speed	0.1~1 mL/s
	Dispense Volume	0.1~50 mL
Aspiration Unit	Dispense Accuracy	1% CV (for 10 mL dispensing)
	Aspiration Method	Peristaltic pump
	Aspiration Speed	0.1~2 mL/s
	Nozzle	Disposable tips
Microscope Module Temperature	Additional Features	Residual volume setting, Plate tilting, Automatic tip replacement
	Temperature	RT. +7~45 °C
CO ₂ Concentration	Accuracy	37 ± 0.5 °C (at 25 °C)
	CO ₂ Concentration	0~20%
Microscope	Accuracy	at 5% ± 0.5%
	Optical System	Inverted phase contrast microscope
	Light Source	Red LED
	Magnification (approx.)	×1.6 (4.24 × 3.39 mm), ×4.0 (1.69 × 1.36 mm)
	Camera	High-sensitivity 1.31-megapixel monochrome camera Effective pixel count: 1,280 × 1,024 pixels
Transfer Robot	Image Storage Format	BMP, TIFF, JPEG
	Transport Method	Paddle type
	Number of Labware Transported	1 SBS standard plate/dish*
	Safety Mechanism	Dual access prevention mechanism, Plate presence confirmation
	Additional Options	Transport stage, Barcode reader

*Special adapters are required when using dishes.



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*Information as of October 2024.
Design, specification and appearance are subject to change without prior notice.
*This product is sold for research use only.

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Integrated Cell Culture System

CellKeeper®II 48 Plus



Co-innovating Excitement
with Mechatronics

CellKeeper® II 48 Plus

Freeing researchers from the burden of daily repetitive tasks!

- Medium Exchange Module
- Microscope Module
- CO₂ Incubator Module

Only One & All in One

CellKeeper® II 48 Plus is an advanced, fully automated cell culture system that integrates a CO₂ Incubator Module, Medium Exchange Module, Microscope Module and Transfer Robot.

- Provides consistent temperature control through direct heating technology.
- Provides stable temperature control for up to 48 samples
- Isolating the drive system from the high-temperature, high-humidity culture chamber ensures high stability.



Integration with Biosafety Cabinet



Transfer Robot

- The CO₂ incubator employs innovative shutter mechanisms for labware loading and unloading.
- Plates/Dishes* are supported from below by the robot arm to prevent dropping during transportation.
- Collision prevention is ensured by detection sensors.

4. Transfer Robot Module

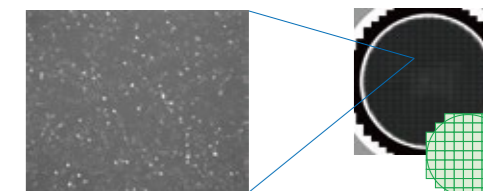
- Supports medium exchange for 16 or more dishes* (Φ100 mm) per hour.
- Possible to set culture schedules by plate unit and group unit.
- Ensures dispensing accuracy within CV ±1% (with 10 mL dispensing).
- Utilizes disposable tips for medium aspiration to prevent cross-contamination.
- Capable of adjusting aspiration volume.
- Accommodates up to four 2 L medium bottles. [No.1](#)
- Provides refrigerated storage for medium, with a heating mechanism to warm the medium before dispensing.



[No.1](#) Four cooling units for medium storage

1. Medium Exchange Module

- Synchronized control of a microscope and high-precision XY stage.
- Functionality to save observation positions as templates.
- Customizable settings for coordinates, magnification, and autofocus for each imaging unit.
- Enables batch observation of the entire well using synthesized images with the tiling function. [No.2](#)
- Allows for consistent control of CO₂ concentration and temperature during imaging.



[No.2](#) Bone marrow-derived mesenchymal stem cells (x1.6 times)

2. Microscope Module

1. Stable Temperature Control [No.3](#)

- Proprietary temperature control system utilizes multiple heater panels for stable temperature maintenance.
- Supports dry heat sterilization, resolving issues with cleaning, decontamination, and sterilization tasks.

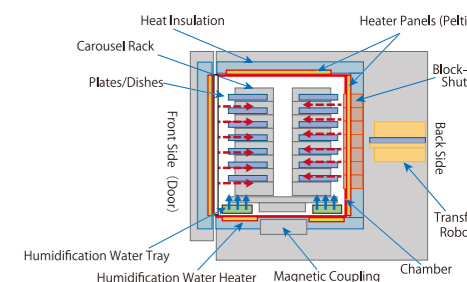
2. Drive System Isolated from Culture Chamber

- Prevents malfunctions in the drive system and sensors due to high-temperature, high-humidity environments.

3. Minimized Maintenance Effort [No.4 & No.5](#)

- Enables effortless cleaning by allowing the removal of internal components from the chamber.
- Humidification water is supplied from outside the incubator chamber. [No.6](#)

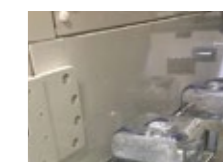
[No.3](#) Incubator internal structure



[No.4](#) Incubator interior



[No.5](#) Flat interior of the incubator facilitates easy cleaning



[No.6](#) External supply of humidification water

Unique Temperature Control

- Direct heating with 13 heater panels.
- Zone control for managing temperature distribution within the culture chamber.
- Eliminates the need for circulation fans and reduces edge effects.

Using a block-type shutter for plate loading and unloading helps suppress temperature variations within the incubator.

Reliable Incubator

- Magnetic coupling drive enables placement of moisture-sensitive components outside the chamber.
- This design isolates the mechanical drive from the rotating shelf in high-temperature, high-humidity conditions, preventing issues like water damage and rust in the motor.
- The carousel is easy to reattach after cleaning, with the system automatically handling precise alignment.

3. CO₂ Incubator Module

Options List

- ◆ Hypoxia Mode
Options available for gas control to support cell culture in low oxygen conditions.
- ◆ Clean Elevator
HEPA filter can be added in the robot workspace.
- ◆ Barcode Reader
Facilitates easy data management for loaded plates and dishes*.
- ◆ Stainless Steel Version
Available with a stainless steel exterior designed for decontamination.
- ◆ External Control Tablet
Additional control tablet can be installed.

Option

Supports integration with third-party equipment! Feel free to contact us!

*Special adapters are required when using dishes.