thermo scientific



Thermo Scientific Heracell VIOS 160i CO_2 Incubator with Cell Locker System

Protected chambers for your most sensitive cells

ThermoFisher SCIENTIFIC

A breakthrough in cell culture management

The Thermo Scientific™ Heracell™ VIOS 160i CO_2 incubator with the Thermo Scientific™ Cell Locker™ System combines our leading technology with an innovative, proprietary solution of removable, protected chambers designed for improved culturing efficiency and security for sensitive cultures, such as stem and primary cells, used in cutting edge applications.

Enhancing the advanced features of the Heracell VIOS 160i CO_2 incubator, the Cell Locker System is a breakthrough for cultures in frequently opened or shared use incubators.

Enhance Your

Stability

Preserve the environment in Cell Lockers when a neighboring chamber is opened, minimizing sample variability

Protection

Provides security from cross contamination due to culture isolation in separate chambers

Flexibility

Organize cultures by separating multiple users, cell types or projects



...that maximizes your sample security



Isolate cultures and projects

The Cell Locker System features up to six individual, autoclavable polycarbonate chambers that divide the incubator chamber, isolating individual cell types or projects. Individual Cell Lockers serve to quarantine cell types or different projects, offering enhanced protection for valuable cultures.

Cross Contamination Protection

Each Cell Locker has dual 0.2 µm membrane filters that permit air circulation but exclude microbial contaminants. Independent tests demonstrate that microorganisms cannot pass between closed chambers.

Minimize environmental variation

When one Cell Locker is opened, the remaining five Cell Lockers maintain the ideal growth environment for sensitive stem cells, primary cells, diagnostic tests and more.

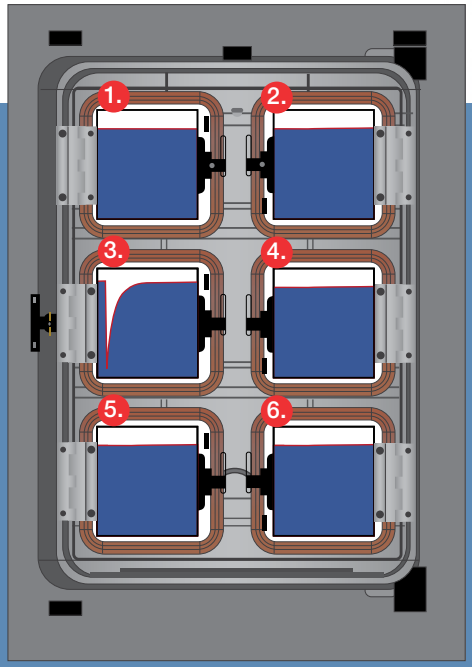
Enhanced Stability

Helps ensure cultures spend more time in conditions that best mimic the in vivo state

While incubation conditions are normally disrupted by routine door openings, the Cell Locker System helps to minimize this impact. During a door opening of one Cell Locker, the temperature, CO_2 gas concentration and humidity remain stable in the unopened Cell Lockers. Compared to traditional incubator designs, the cell cultures in the Cell Locker Solution are in the desired *in vivo*-like state longer because they are not exposed to every door opening.

THRIVE active airflow gently and evenly distributes humidified, conditioned air throughout Cell Lockers, creating a uniform culture environment in each Cell Locker. THRIVE airflow provides fast recovery from door openings for each opened Cell Locker.





Demonstration of temperature, humidity and CO_2, stability in the unopened Cell Lockers when one Cell Locker (#3 as an example) is opened.

Learn more about the improved culture conditions in the Cell Locker System

- For consistent results, the uniformity in each Cell Locker is ±≤0.3°C
- When one Cell Locker is opened, the other Cell Lockers maintain stable conditions*, preserving the desired *in vitro* environment
- Compared to the standard single glass door design, the temperature drop in the opened Cell Locker is reduced by 50%
- With the Cell Locker system, gas consumption from a door opening is reduced by 50%, saving time and money

For more information, see “Functional Performance and Benefits of the Thermo Scientific Cell Locker System”

*Conditions remain stable within these spatial deviations: temperature +/-0.3°C, humidity +/-3%, and CO_2 +/-0.2%

Enhanced Protection

Individual chambers maximize security against costly cross contamination

Cross contamination from neighboring cultures or circulating microorganisms is a constant risk in many traditional incubators. In the Heracell VIOS CO_2 incubator, the HEPA system filters the entire incubator air volume to achieve ISO Class 5 cleanroom air quality. The Cell Locker further protects from cross contamination by dividing the incubator into six individual chambers. Each individual Cell Locker is effectively a quarantine chamber. Independent 3rd party tests validate protection against circulating microorganisms (when used as directed).



The replaceable 0.2 µm membrane filter has an effective pore size of about 0.02 µm when filtering air[1] and is hydrophobic, oleophobic, resistant to organic solvents and tested for biosafety and low cytotoxicity.



Table 1:
Independent tests show common cell culture contaminants were unable to enter or exit a closed Cell Locker. Two common cell culture contaminants were tested in the Cell Locker System inside the Heracell VIOS CO_2 incubator. No microorganisms were able to travel into or out of the Cell Lockers.

For more information, see "How does the Thermo Scientific Cell Locker System isolate cell cultures and projects in a CO_2 incubator, protecting from cross-contamination?"

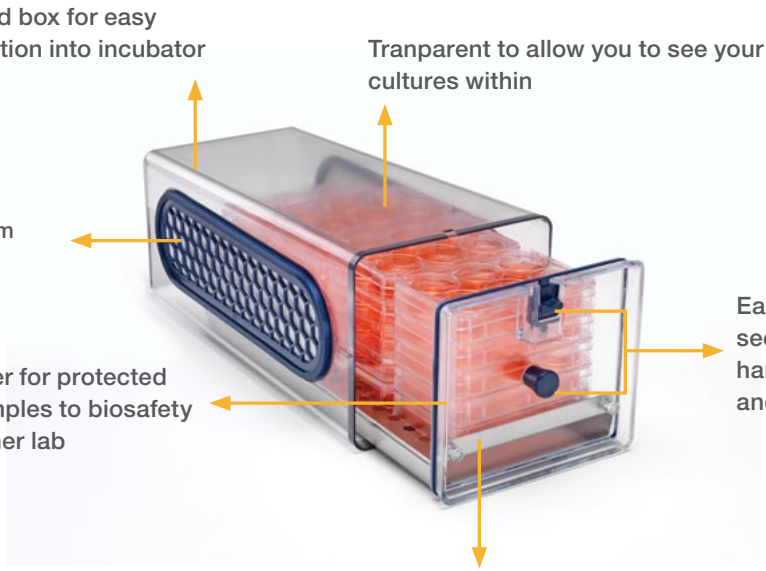
Independent Tests with Cell Locker System			
Microorganism Tested	**Total Circulated**	**Total Outside Cell Lockers**	**Total Inside Cell Lockers**
Staphylococcus aureus ATCC 6538	9.6×10^4	TNTC*	0**
Mycoplamsa orale DSM 25590	9.3×10^4	TNTC*	0**

*TNTC = too numerous to count. For each test, 48 open agar plates were placed outside of the Cell Lockers.
**A total of 24 culture plates were placed open inside the Cell Lockers. All showed zero growth.

[1] Boomus M. Medical Device & Diagnostic Industry News Products and Suppliers. 2006.

Enhanced Flexibility

The Cell Locker can be configured to fit the unique needs of your lab



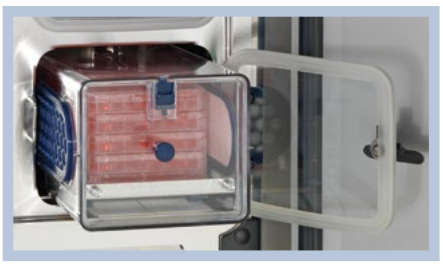
Cell Locker configuration can be optimized for your workflow

The Cell Locker was designed with flexibility in mind. Different cell types, samples, users or projects can be segregated within shared incubator space.

- Dishes and flasks can be removed individually; on a work tray; or inside the entire Cell Locker with optional transport cover, thus protecting samples from outside air
- Each Cell Locker holds 9 each T-75 cell culture flasks, 20 each 6-well plates, or 24 each 96-well plates
- The Cell Locker can be manually disinfected or can be autoclaved a maximum of 12 times
- Individual Cell Lockers can be placed in any incubator to quarantine samples or to isolate cultures or projects



The non skid tray slides out to allow access to culture vessels, or the entire tray can be removed. The specialized design prevents tipping.



Remove the Cell Locker with optional transport cover to protect all cultures from outside air, for transport to a biological safety cabinet or to another lab.

Thermo Scientific Heracell Vios 160i CO_2 Incubator

with the Cell Locker System

Our advanced technologies deliver the optimized, protected growth environment required to support a range of cell culture needs. Equipped with the Cell Locker System, the Heracell VIOS CO_2 Incubator is designed to maximize the level of security for today's demanding research applications.

- **Now featuring intuitive electronic lock automatically engages, providing convenient, worry-free sterilization**
- 165 L interior chamber with the new 6 segmented, gas tight inner door configuration and 3 shelves designed to accommodate 6 individual Cell Lockers
- Choose electropolished stainless steel or 100% pure copper chamber interior
- THRIVE airflow technology provides enhanced stability, tight uniformity, and fast recovery
- Unique covered humidity reservoir maximizes humidity without condensation
- ISO Class 5 HEPA filtration provides clean room air quality in the chamber
- Thermo Scientific Steri-Run overnight 180˚C sterilization cycle achieves 12 log Sterility Assurance Level (SAL) total sterilization
- Thermo Scientific iCAN touchscreen interface provides bright at-a-glance monitoring and complete data visibility to monitor all incubator interactions and parameters
- Temperature resistant, bulb-free IR CO_2 sensor (IR180Si)
- Optional O_2 control of 1-21% or 5-90%



HERAcell VIOS 160i CO_2 Incubator

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Ordering Information

Configure Heracell VIOS 160i with the Cell Locker System to fit your needs

1. Choose an incubator base model that includes 6 door gas tight screen and modified interior and shelving (does not include Cell Lockers)

Heracell VIOS 160i CO_2 Incubators	Stainless Steel Interior	100% Copper Interior
Single Chamber with IR180SI CO_2 sensor, 120V 50/60HZ	51033570	51033574
Single Chamber with IR180SI CO_2 sensor, 230V 50/60HZ	51033571	51033575

2. Choose package of 6 single Cell Lockers for your incubator

Package of 6 Cell Lockers with stainless steel sliding tray and transport cover	50151650X6
Package of 6 Cell Lockers with copper sliding tray and transport cover	50154739X6

3. Choose additional factory installed options for your application

Internal 4-20 mA analog data output	51901143
Left hinge door configuration	51900293
Internal gas guard for CO_2	51900735
Internal gas guard for N_2/O_2	51900736
Stainless steel external outer casing	51901126
1-21% O_2 control	51901137
5-90% O_2 control	51901138

4. Choose alternative electrical configuration if required

Electrical configuration for Switzerland	51900300
Electrical configuration for Great Britain	51900303
Electrical configuration for Italy	51900306
Electrical configuration for Australia	51900449
Electrical configuration for Denmark	51900481
Electrical configuration for China	51900900

5. Choose customer installable Accessories*

Support frame for double chamber, 172 mm high (with casters)	50145394
Lower profile support frame for double chamber (with casters), 73 mm high	50154551
Support frame for double chamber, 200 mm high (without casters)	50145435
Adaptor required for stacking VIOS models	50148171
Replacement membrane filters (2/pk)	50153148
Stacking adaptor configured to stack Heracell VIOS on top of a legacy Forma Steri-Cycle 184 L	50148173
Single Cell Locker with stainless steel sliding tray and transport cover	50151650
Single Cell Locker with copper sliding tray and transport cover	50154739

*Please consult the Heracell VIOS brochure for additional available accessories

Find out more at **thermofisher.com/co2**

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		Heracell VIOS 160i CO_2 Incubator	Heracell VIOS 250i CO_2 Incubator
Construction	Chamber volume	165 L (5.8 cu.ft.)	255 L (9.0 cu ft)
	Interior chamber	electropolished stainless steel or 100% solid copper	
	Exterior chamber	18 gauge (1 mm), cold-rolled steel, powder coated	
	Access port	42 mm diameter	
	Data outputs	remote alarm contacts, USB, and optional 4-20 mA	
Dimensions	Internal dimensions (w x h x d)	470 x 607 x 576 mm	607 x 670 x 629 mm
		18.5 x 23.9 x 22.7 inches	23.9 x 26.4 x 24.8 inches
	External dimensions (w x h x d)	637 x 900 x 880 mm	774 x 968 x 934 mm
		25.1 x 35.4 x 34.6 inches	30.5 x 38.1 x 36.8 inches
	Operating weight	83 kg (without accessories), (183 lbs)	97.5 kg (215 lbs)
Shelves	Dimensions (w x d)	423 x 465 mm (16.7 x 18.3 in)	560 x 500 mm (22.05 x 19.68 in)
	Number standard/maximum	3/10	3/12
	Max. load per shelf/total load	10/30 kg (22/66 lbs)	10/30 kg (CU models), 14/42 kg* (SST models)
	Construction	perforated, adjustable	
Electrical	Rated voltage	1/N/PE AC (± 10%), 230, 220 V, 120 V, 100 V	
	Nominal kW consumption (Steri-Run)	0.56 (1.06) – 230 V, 0.51 (0.97) – 220 V	0.76 (1.26)- 230 V, 0.69 (1.16) -220 V)
		0.55 (1.01) - 120 V, 0.39 (0.72) – 100 V	0.75 (1.25)-120 V, 0.53(0.89)-100 V
	Rated frequency	50/60 Hz	
	Heat emission to environment at 37°C	0.06 kWh/h	0.07 kWh/h
	During Steri-Run:	0.26 kWh/h (average), 0.78 kWh/h (heating time), 0.59 kWh/h (hold time)	

Temperature	Control	±0.1°C
	Range	3°C above ambient to 55°C
	Uniformity	< ±0.3°C
	Ambient range	18...34°C
	Tracking alarm	±1°C
Sterilization cycle	Cycle temperature	180°C on all internal surfaces
	Cycle duration	Under 12 hours
Humidity	RH	>_93% @ 37°C
	Humidity reservoir	max. 3 L / min 0.5 L
CO_2	Control	± 0.1%
	Range	1-20%
	Tracking alarm	±1%
	Inlet pressure	12-15 PSI (0.8-1.0 barr)
	Gas purity	min. 99.5 or medical quality
	CO_2 inlet	1/8" hose (barbed)
O_2	Control	± 0.1%
	Range	1-21% or 5-90%
	Tracking alarm	±1%
	Inlet pressure	12-15 PSI (0.8-1.0 barr)
	Gas purity	min. 99.5 or medical quality
	O_2 inlet	1/8" hose (barbed)

* Equal distribution on the shelf