eppendorf



Culture of Tomorrow

CellXpert® – the new family of Eppendorf CO_2 Incubators

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»What will your cell culture require over the next 10 years?«

Take a look into the future of your cell culture lab

> Which cell types will you be working with and under which atmospheric conditions?
> What regulatory and documentation requirements will you have to fulfill?
> Will it become necessary to rearrange your lab or move it altogether?
> How many people will be working in your lab sharing the same incubator?
> Will you be using other devices inside your incubators?
> Would additional requirements emerge regarding sustainability, gas consumption, or general operating costs?

The CellXpert CO_2 incubator family will support you for the culture of tomorrow.
The CellXpert C170i provides you with the following benefits:

Prepared for the future

> In-field options for the future
> Cost-efficient & resource-saving
> Up to 25 % more usable space in a small footprint
> Advanced and intuitive user interface
> Easy documentation options
> User management with option to restrict access to settings



Optimized growth conditions for sensitive cells

> Precise temperature uniformity throughout the chamber
> Fast gas and temperature recovery without overshooting
> Protection from vibrations and turbulence with fanless design



Efficient and Easy Contamination Protection

> 180 °C High Temperature Disinfection (HTD)
> Seamless chamber and minimal internal parts
> Protection without internal HEPA filters
> Options for copper interior



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CellXpert® CO_2 Incubators

Intuitive touch screen
for fast, easy, and complete control*

Easy access USB ports
for fast data export and documentation*

Robust new handle design
for comfortable, low stress door opening*



Changeable door hinge position
for high flexibility

Ethernet connectivity
for easy connectivity and networking

Smart gas control
for fast recovery and cost savings

Fast feedback CO_2 sensors
for reliable atmosphere control

Seamless chamber
for easy cleaning and reduced contamination risk

Magnetic latches
for easy, ergonomic operation

Heavy duty shelves
for increased stability and optimized air flow

Multiple temperature sensors
for homogeneous conditions



*Available on C170i models.

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The intuitive, clearly arranged touch screen user interface ensures easy and full control over setting of parameters, monitoring, and documentation. The responsive, industrial quality touch screen provides you with fast and continuous navigation without lag time.

Prepared for the Future

Will it become necessary to rearrange your cell culture lab or move it to a new location altogether? How important is saving space for you? CellXpert CO_2 Incubators give you the option to change the door handle position whenever necessary. Also, if you ever need a humidity sensor system to monitor and document evaporation protection, you can have this upgraded on-demand. With the CellXpert C170i CO_2 Incubator, our skilled service technicians can modify your device on-site – directly in your lab, if needed. Stay flexible for the future!

> Customize your device to meet your future needs
> Reduce costs by getting the features you need at the time you need them
> Enjoy peace of mind knowing that your investment can be adapted to your changing needs and requirements



Stay flexible for the future and change the door handle position when you need it

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Optimized Growth Conditions

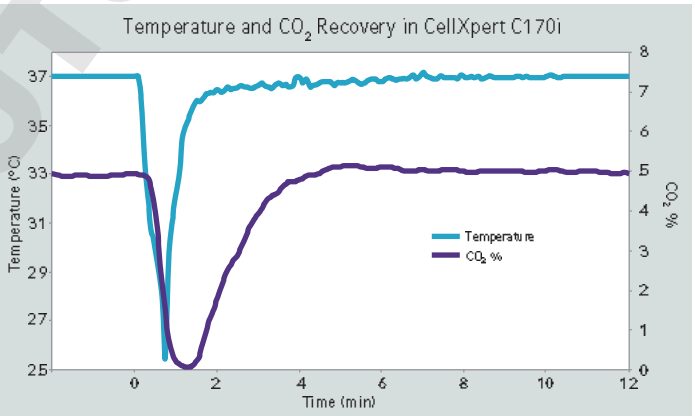
Uniform temperature verified at 27 spots inside the incubator (German DIN 12880)
To accurately compare cell growth in vessels at different locations inside the incubator, the temperature needs to be highly uniform. Together with advanced microprocessor control, this is achieved in CellXpert incubators by replacing the traditional configuration of one temperature sensor with numerous, independent sensors in different locations. The effectivity of this novel approach has been verified by measuring the temperature deviation among 27 spots inside the incubator based on the German DIN 12880 norm – and far exceeding the requisite specification.



Position of the 27 sensors to verify equal temperatures at different locations.

Fast recovery without regulation overshoot– Temperature and CO_2 recovery in less than 5 min*
A main factor to ensure the reproducibility of experiments is to minimize atmospheric fluctuations inside the incubator. It is crucial that drastic changes be avoided (e.g. by reducing total door-opening time). Also, the atmosphere should recover rapidly while avoiding significant overshoot (e.g. temperature exceeding the setpoint). CellXpert incubators achieve this with fast feedback sensors, advanced microprocessor control of gas inlet valves, and individually-controlled heating circuits in every wall (6-sided direct heating). Fast circulation and mixture of the atmosphere is ensured by powerful natural convection caused by temperature gradients in the heating circuits.

* To 98% of initial value after 30 s single door opening. Measured with external sensors.



Temperature and CO_2-recovery following 30 s door-opening. Notice the typical regulative oscillations before the initial value is reached.

Are you always looking for ways to improve your cell culture results?
Improve Now – With Smart Cell Culture Consumables

> Reduce evaporation, use 38% more wells and increase reproducibility
> Keep your cells warm outside the incubator and prevent rapid temperature shifts
> Enhanced Mycoplasma protection
> Minimized interference by supplemental substances in the plastic material, verified by 3rd party testing
> Enhanced assay performance with better optical properties
> Ready to use, synthetic surface cultureware for stem cells



Learn more and get a free sample at:
www.eppendorf.com/ccc

DUPLIQUE UTSCIENCAS



The fanless design supports a turbulence-free atmosphere and comparable growth conditions between different shelves.

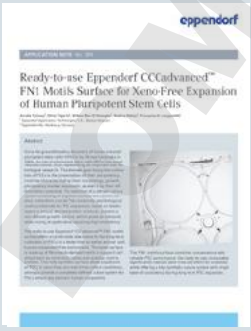
Vibration and turbulence protection by fanless design
Have you ever experienced variations between cells grown in vessels on different shelves, especially between the top shelf and others? These differences can be caused by air turbulences that disrupt the protective micro-atmosphere above the medium. Air turbulence can be generated by fans used to circulate the atmosphere inside of standard incubators. Additionally, uneven cell growth occurs as a result of vibration to the vessels from the fan – especially in the case of sensitive cells. These effects can be avoided with fanless incubators like the CellXpert. Air circulation via convection provides uniform temperatures and conditions without the risks due to a fan.

Would you like to learn more about how powerful convection is achieved?

Visit or scan to watch video:
www.eppendorf.com/CellXpert

Proven performance with demanding cells – Application examples

Long-term expansion of stem cells on CCCadvanced® FN1 motifs cultureware



hiPSCs - Long-term expansion
Analysis of growth rate, morphology and differentiation potential during 20 successive passages + comparison to Corning®Matrigel®

Click or transfer to follow:
www.eppendorf.com/appnote389

Learn more and get a free sample at:
www.eppendorf.com/ccc-advanced



Tired of spending precious lab time coating vessels for your iPSC- or MSC-culture, often with unpredictable results?

How about a xeno-free or, even better, a synthetic surface that is ready-to-use for fully defined conditions of your stem cell culture?

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Full Control, Intuitively



Pre-installed and customer-programmed tasks can be set with VisioNize® to remind you of regular tasks, e.g. performance of a disinfection cycle, cleaning, splitting cells, refilling the water reservoir, or performance checks with external sensors. Alarms can be adjusted for different parameters, e.g. door-opening time. This way, specific cell-conserving user habits can be established in your lab.



Filter and export performance charts, events, or HTD-protocols within seconds via the integrated USB ports at the front. Data is logged on an internal, reliable, solid-state drive (SSD) and can also be downloaded via an Ethernet-port. The CellXpert supports you to fulfill ever-increasing demands for documentation of cell culture conditions, e.g. for regulated environments.

Convenient remote monitoring and the connected lab
How long does it take your current system to notify someone in case of a power failure or empty gas cylinder? Is this person a qualified user with specific knowledge about cell culture?

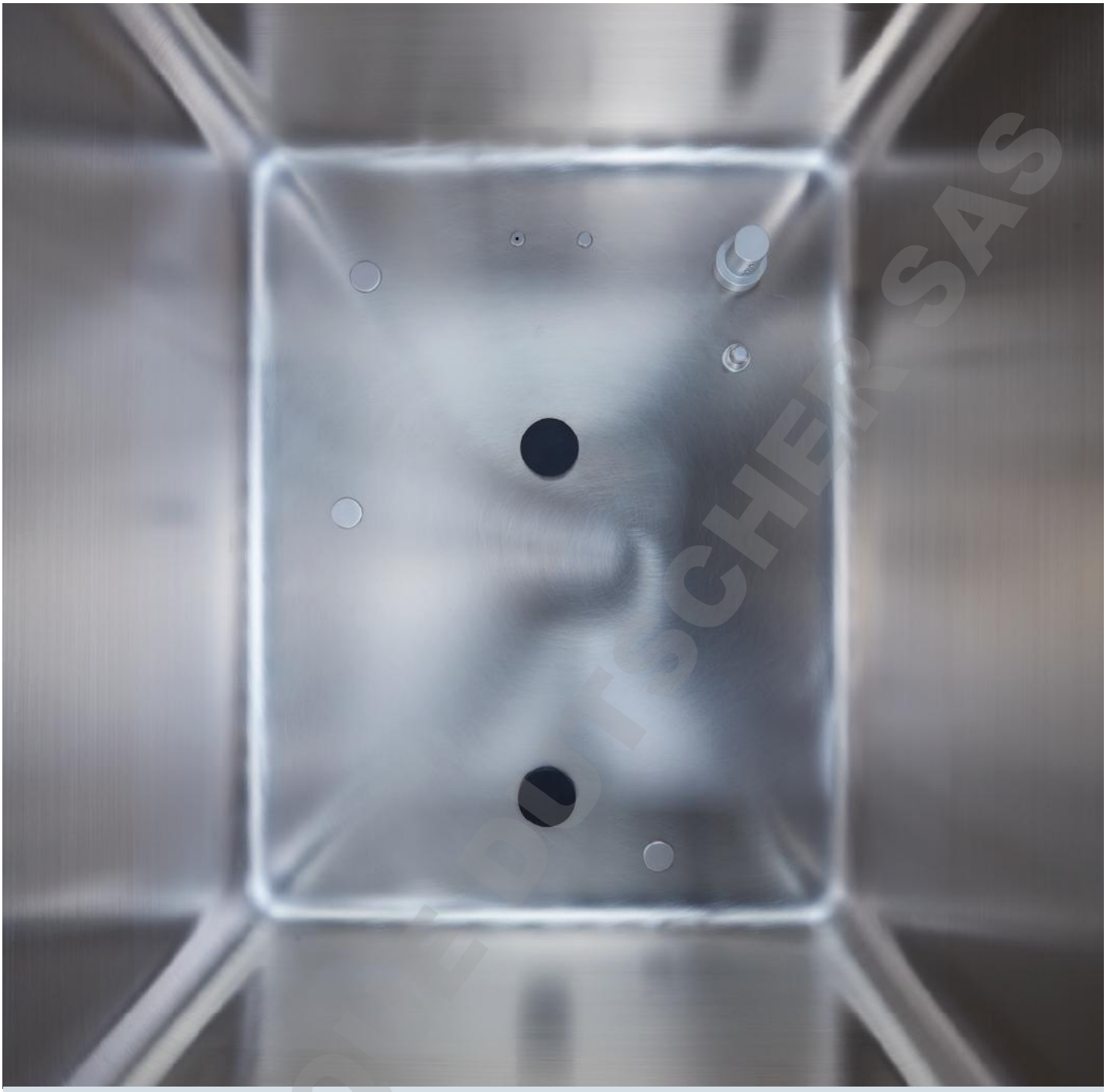
In addition to the standard building management system (BMS) relay and an option for a 4 – 20 mA interface, CellXpert incubators and the VisioNize system can send important notifications instantaneously and directly to the right person. For full protection of your precious cell culture experiments.

> Make documentation easy with filters and export options
> Set customizable alarms and tasks to maintain a reliable environment for your cells
> Monitor the status of connected devices and optimize your workload
> Define events directly on VisioNize-onboard devices and receive information via e-mail notification
> Organize locations, documents and contacts for your devices



Learn more at:
www.eppendorf.com/VisioNize

COMMERCIALE DUTSCHER SAS



Nowhere to hide for contaminants and cleaned fast: The smooth, seamless surface of the CellXpert chamber with fanless design.

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Convenience by Design

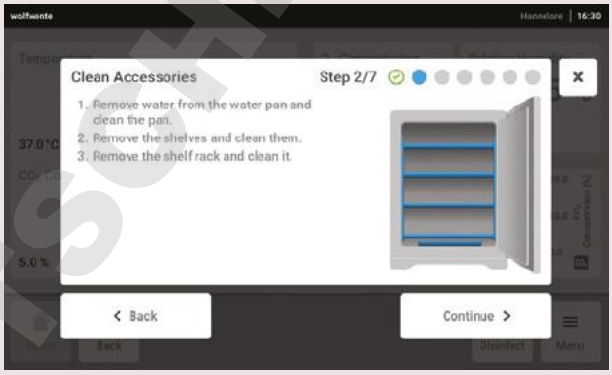
If it´s easy to do, it´s more likely to get done – seamless chamber & minimized internal parts

Do you remember the last time you cleaned your incubator? How much time did you spend to disassemble and remove internal chamber parts? How much time did it take to wipe down every little corner of the chamber and shelf supports? Did you have to remove internal HEPA-filters before starting an HTD, just to put these non-sterile potential sources of contamination back in after the HTD procedure? Make your life easier and gain precious time for other things with CellXpert incubators. The seamless, stainless steel chambers reduce areas prone to contamination and can be cleaned and reassembled within a few minutes

Fast, Easy, and Reliable Contamination Protection

Easy and effective 180 °C High Temperature Disinfection (HTD)
The 180 °C HTD that comes standard on the CellXpert C170i ensures a high level of contamination protection. There is no need to store or handle toxic reagents to effectively disinfect the CellXpert incubator.

The user interface provides short, clear, and illustrated step-by-step instructions, to ensure a standardized and complete pre-HTD cleaning. This procedure is sensor-supported for a high protection in case of user errors. High quality and durable CO_2 sensors remain in the chamber during the HTD.

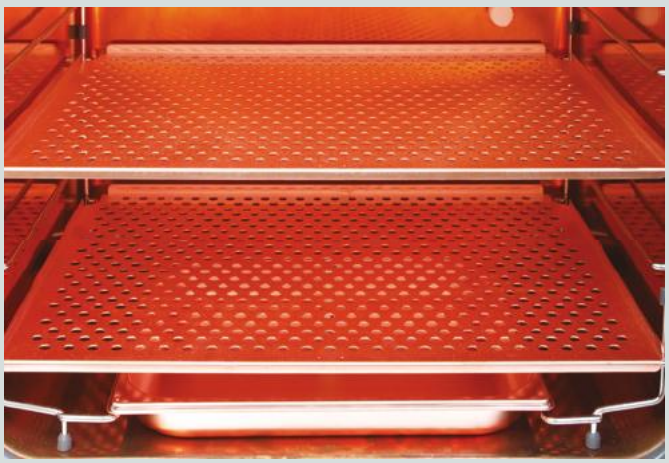


Simply follow the step-by-step instructions on the screen to easily disinfect your incubator.

Performance protocol and access restriction
After the HTD procedure, a performance protocol including date, time, temperature reached, and a signature field can be created. This is especially important for customers in regulated fields and can be easily downloaded within a few seconds via the USB port. Because it is easy to start the HTD with a few taps of the screen, it might also be necessary to restrict the access. With the on-board user management, permissions and restrictions can be set to prevent any unauthorized start of the HTD. Set permissions and restrictions via the on-board VisioNize user management to prevent any unauthorized start of the HTD. Only authorized users defined by the administrator will have access to the procedure.

Upgrade Your Contamination Protection

Choose the options and features to meet your needs and maintain your sample safety. CellXpert incubators are built to the exacting specifications that you require.



Additional effective contamination protection can be achieved with the optional copper package.

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Internal HEPA-filters and why the CellXpert does not utilize them

At first glance, a HEPA filter inside the air stream of some incubators with fans appears to offer additional contamination protection. But this placement could end up being a distinct contamination risk. CellXpert incubators however, do not utilize internal HEPA-filters for several reasons:

HEPA-filters are encapsulated in heat-sensitive containers that need to be removed before starting an HTD. After the HTD the contaminated filter (filters trap particles without destroying them) must be placed back into the incubator. This includes an extended door opening duration and handling of the filter within the chamber. This procedure itself poses a high risk of contamination.

HEPA-filters usually trap particles larger than 0.3 µm. What about particles that are smaller (like viruses or ubiquitous Mycoplasma, size 0.15 – 0.3 µm)?

Additionally, the lifetime and efficiency of HEPA-filters depends on a variety of other factors. Therefore, filters need to be replaced regularly, leading to high recurring costs.





The single piece water tray can be removed easily for emptying, visual inspection, cleaning, and refilling. No hard to access additional drain valves need to be cleaned.

Would you like to see the smart interior in more detail?

Visit or scan to watch video:
www.eppendorf.com/CellXpert

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Enhanced Ergonomics

Reduce stress and speed up your workflow
Working in a cell culture lab is often associated with physical and psychological stress (e.g. working under time constraints, high noise and poor ergonomics; constant disinfection and care to avoid contamination; processing of many samples per day; and handling of various vessel types). This stress not only reduces your well-being and can lead to errors in the workflow, but could also contribute to illness in the long term.

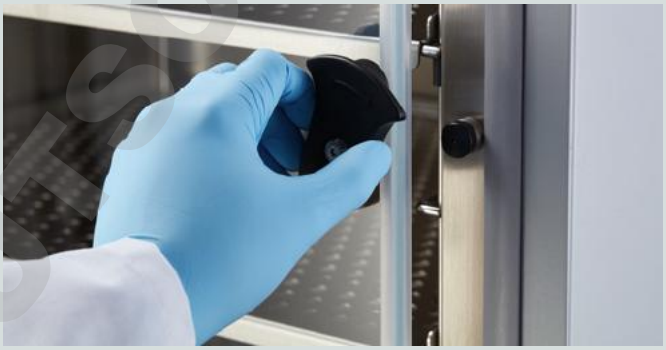
For the development of CellXpert incubators, Eppendorf rethought some major construction concepts of other CO_2 incubators in order to create more ergonomic solutions. The comfort and convenience for the everyday user were always foremost in our mind.

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The outer door comes with a unique magnetic closure concept that requires significantly less force to open. An audible alert during closing tells you that the door is securely locked. The novel, robust, and ergonomic handle provides a solid and comfortable grip.





The tightly closing inner door latches also utilize the new magnetic closure concept. The dual direction latch on the inner door can be simply pulled or turned to open, then pushed or turned to close. This way, the CellXpert incubator can provide both advanced vibration protection for sensitive cells and adjust to differing user habits.

Eppendorf PhysioCare Concept®
The development of each Eppendorf product is based on three spheres that support the health of their customers. These encompass the whole spectrum of ergonomics, not just a single element – a PhysioCare labelled product offers a holistic solution. It starts with the product itself: the shape, the weight, the forces, the concept of operation from which emerges support that can enhance and improve lab processes.



Sphere 1 – The User
The PhysioCare Concept guarantees an ergonomic design and an optimized product performance according to the needs of the individual.

Sphere 2 - The Lab
The PhysioCare Concept allows the uncomplicated integration of instruments in the lab as well as adhering to its specific requirements.

Sphere 3 - The Laboratory Workflow
The PhysioCare Concept ensures general support to enhance processes around the lab and improve the results of the whole organization.

Learn more at:
www.eppendorf.com/PhysioCare

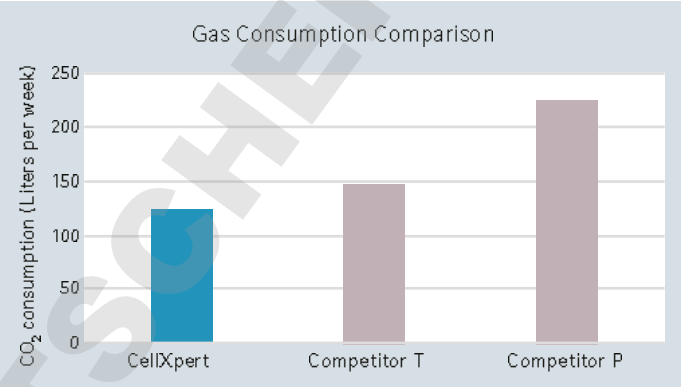
NOMINIQUE DUTSCHER SAS

Save Money and Lab Space

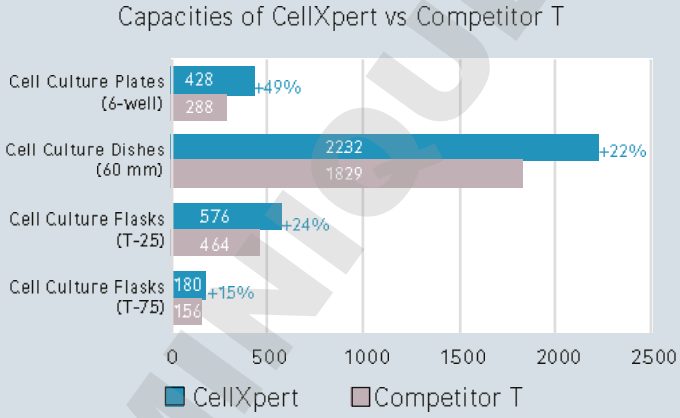
Save money: Low gas consumption, no internal replacement parts and recurring costs

The cost of gas and the effort to exchange gas cylinders can produce significant running costs. Depending on the type of gas, the local gas prices, and the net door opening time of the incubator during the day, these costs can easily exceed the initial costs for the incubator itself after only a few years. Therefore, it is worth taking a closer look into the gas consumption of different incubator models. CellXpert CO2 incubators are designed for optimal gas consumption and to help you keep these costs at bay.

In addition to running costs for gas, CellXpert incubators save on significant recurring costs, labor, and incubator downtime because they do not utilize expensive internal replaceable parts like HEPA-filters or UV-lamps. Take a look at a cost estimate for these additional parts used by other incubators. They all add up to a much larger sum than you might imagine.



Representative comparison of gas consumption (setpoints 5 % CO_2 & 37 °C)





Save precious lab space: up to 25% more usable space within a small footprint

CellXpert incubators are constructed with a fanless design and come without any fan-related internal parts (e.g. fan, various duct parts), providing significantly more space for samples. Furthermore, the smart racking system and the innovative, patented insulation ensure higher capacity with a minimal footprint to save precious lab space.

Would you like to know more about how the CellXpert CO_2 Incubator can save money?
Want to compare CellXpert CO_2 Incubators to other devices on the market?
Contact your Eppendorf representative.

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The CellXpert C170 comes with the same footprint and similar easy-to-open magnetic latching system.

Quality Meets Simplicity: C170

Are you looking for a more economical version of the C170i with the same level of reliability, quality, and capacity?

Meet the CellXpert C170!

The CO_2 solution that fits your lab

CellXpert C170 incubators are constructed in the same facility as the CellXpert C170i. But these »little brothers« to the 'i' versions are made with simplified operation in mind. You get most of the same enhanced benefits of the C170i, but without some of the more complex and specialized features demanded by C170i users. Eppendorf has designed the C170 model to deliver high-quality, reliable results within a simplified user experience.

> Fan-less design for increased capacity, lower operating costs, and less opportunity for contamination
> 140 °C High Temperature Disinfection (HTD)
> Seamless, stainless-steel interior to minimize possible points of contamination
> Perforated and reinforced 1.5 mm stainless steel shelves
> Ethernet port for data export
> Dual-channel Infrared (IR) CO_2-sensor
> Intuitive user interface
> Easy-to-open magnetic latches on inner door





Top: Intuitive, familiar, and easy-to-use push-button interface makes setting your temperature and CO_2 concentration fast and simple.

Left: Get all the same quality and capacity as the C170i models, but at a more economical price.

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Quality made in Hamburg, Germany





	CellXpert C170i	CellXpert C170
Display	touch screen	standard LED display
High temperature disinfection (HTD)	180 °C standard	140 °C standard
Water/Humidity monitoring	optional	–
In-field upgradeable options	> Water/humidity monitoring > Door handle position	> Door handle position
Capacity	170 L (6.0 ft³)	
Dimensions external (W x D x H)	71.8 x 71.5 x 90.0 cm (28.3 x 28.1 x 35.4 in)	
Dimensions internal (W x D x H)	53.9 x 44.5 x 69.2 cm (21.2 x 17.5 x 27.2 in)	
Weight w/o accessories	81 kg (179 lbs)	
Benchtop (B), Under Bench (U), Floor (F) or Stackable (S)	B, U, F, S (x2)	
Sealed inner glass doors	standard	
Temperature range	Ambient +4 °C to 50 °C	
Temperature control increment	0.1 °C	
Temperature stability at 37 °C	±0.1 °C	
Temperature uniformity	±0.3 °C	
CO_2 range	0.1 – 20 %	
CO_2 control increment	0.1 %	
CO_2 stability at 5 % CO_2	±0.1 %	
CO_2 uniformity	±0.1 %	
Access ports	2	
BMS relay	standard	
4 – 20 mA interface (for remote monitoring)	optional	optional
Number of shelves (standard/max)	4/8	3/8
Copper package	optional	–
On-board data logging	standard	–
Data export interface	USB, Ethernet, VisioNize onboard	Ethernet, VisioNize ready (requires VisioNize box)

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Our Service Culture

For peace of mind

CO_2 incubators feature complex, dynamic control systems to maintain user-defined culturing parameters. Accurate measurement and control feedback of multiple environmental variables is necessary in order to optimize cell growth and proliferation, while also minimizing intercellular variation in physiology, metabolic function, and expression.

We offer service programs to meet your needs and to ensure your instrument is operating at peak performance over its full lifetime.

CO_2 Incubator Performance Plans include a choice of preventive maintenance programs covering cleaning, inspection and maintenance work, as well as the validation and adjustment of operating parameters (such as temperature, humidity, CO_2) in accordance to Eppendorf specifications.

> Minimizes risk of failure in your process
> Long-lifetime of your instrument
> Improves reliability and consistency of culturing

Learn more at www.eppendorf.com/epServices

Ordering Information

Description	Order no.
ESSENTIAL CHECK: Check of all fundamental functions of the product	0082 060.003
ADVANCED MAINTENANCE: Preventive maintenance service to meet manufacturer specifications	0082 060.004
PREMIUM SERVICE: Complete maintenance and repair service agreement	0082 060.005
IQ/OQ SERVICES: Verification services to assure that instrumentation is installed and running according to manufacturer specifications including documentation for quality and regulatory audits	
Installation Qualification (IQ)	0082 060.007
Operational Qualification (OQ)	0082 060.008
IQ/OQ	0082 060.009

PROPRIÉTÉ EUTISOLER SAS

CellXpert® C170i Ordering Information

Device Options			Order no.				
Door Handle	Humidity Monitoring/ Water Level Monitoring	Copper	230 V, 50/60 Hz European	230 V, 50/60 Hz UK/HKG	230 V, 50/60 Hz Australia	230 V, 50/60 Hz China	100–120 V, 50/60 Hz USA/Japan
Right			6731 000.011*	6731 000.012*	6731 000.013*	6731 000.014*	6731 010.015*
Right		Yes	6731 000.511	6731 000.512	6731 000.513	6731 000.514	6731 010.515
Right	Humidity monitoring		6731 000.111*	6731 000.112*	6731 000.113*	6731 000.114*	6731 010.115*
Right	Water level monitoring		6731 000.211*	6731 000.212*	6731 000.213*	6731 000.214*	6731 010.215*
Right	Both		6731 000.311*	6731 000.312*	6731 000.313*	6731 000.314*	6731 010.315*
Left			6731 000.021*	6731 000.022*	6731 000.023*	6731 000.024*	6731 010.025*
Left		Yes	6731 000.521	6731 000.522	6731 000.523	6731 000.524	6731 010.525
Left	Humidity monitoring		6731 000.121	6731 000.122	6731 000.123	6731 000.124	6731 010.125
Left	Water level monitoring		6731 000.221	6731 000.222	6731 000.223	6731 000.224	6731 010.225
Left	Both		6731 000.321	6731 000.322	6731 000.323	6731 000.324	6731 010.325

*Stock article; all others are built-to-order

CellXpert® C170 Ordering Information

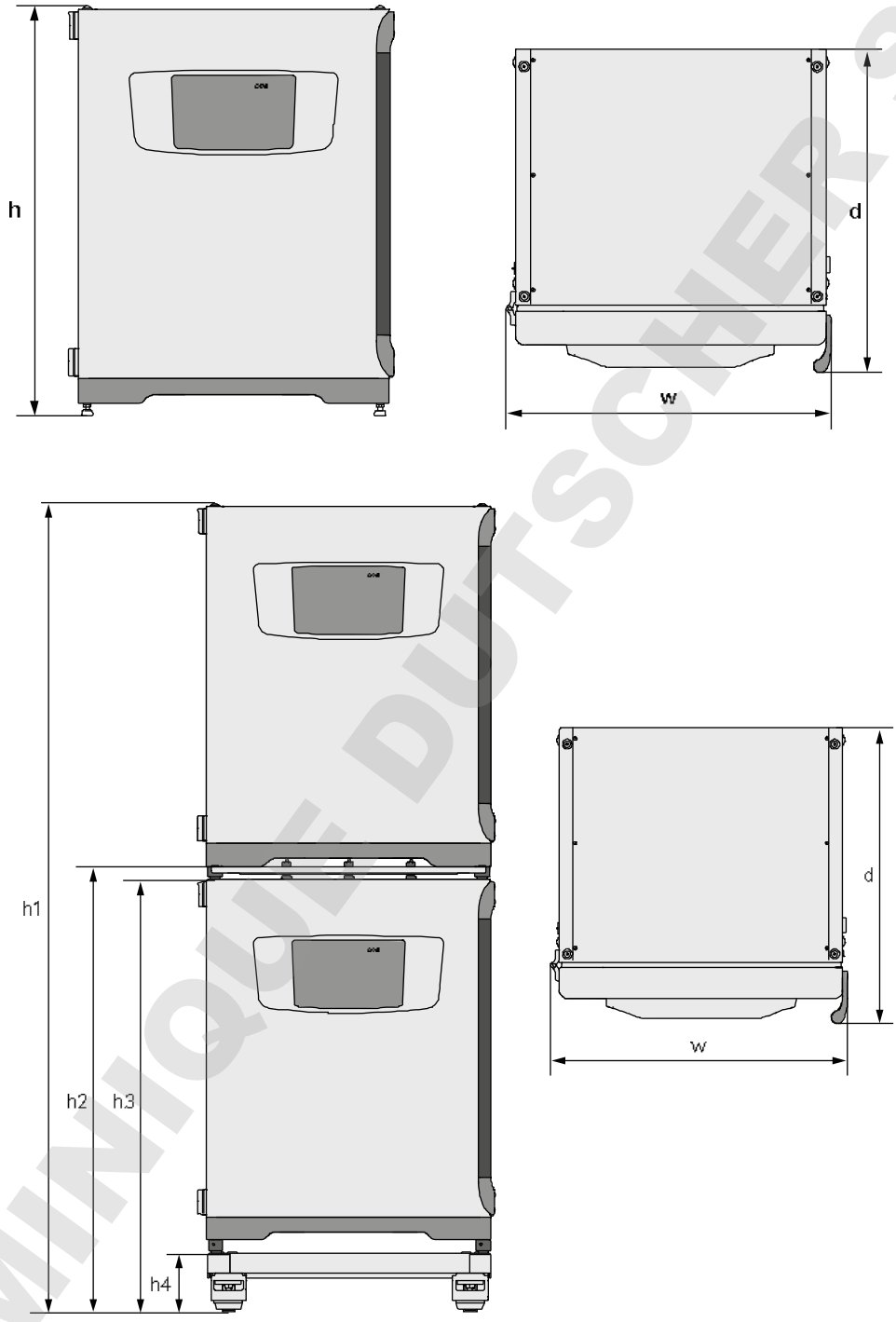
Device Options	Order no.				
Door Handle	230 V, 50/60 Hz European	230 V, 50/60 Hz UK/HKG	230 V, 50/60 Hz Australia	230 V, 50/60 Hz China	100–120 V, 150/60 Hz USA/Japan
Right	6734 000.011	6734 000.012	6734 000.013	6734 000.014	6734 010.015

Accessories Ordering Information

Description	Order no.
Shelves for 170 L incubators, 2 pieces	6710 859.009
Shelf rack for 170 L incubators	P0628-6390
Water tray for 170 L incubators	P0628-6140
Copper shelves for 170 L incubators, 2 pieces	6710 859.106
Copper water tray for 170 L incubators	P0628-6260
Gas tubing 3 m, with in-line gas filter	6731 070.107
In-line gas filter, 2 pieces	6710 070.251
BMS connector	6731 070.069
Plug for access port, 2 pieces	6731 070.034

Description	Order no.
Safety fastening kit	6710 070.235
Automatic gas cylinder change-over unit	P0628-5000
New Brunswick™ Galaxy® Gas Analyzer CO_2	P0628-6150
New Brunswick™ Galaxy® Gas Analyzer CO_2, O_2	P0628-6831
New Brunswick™ Galaxy® Gas Analyzer CO_2, O_2, RH	P0628-7890
Temperature probe 100 mm tip	P0628-7880
Temperature probe 5 mm tip	P0628-7881
Stacking stand, lower frame with castors	6731 070.093
Stacking stand, upper frame	6731 070.085

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Dimensions

Width (w)	71.8 cm (28.3 in)
Height (h)	90.0 cm (35.4 in)
Depth (d)	71.5 cm (28.1 in)

Height (h1)	194.6 cm (76.7 in)
Height (h2)	107.3 cm (42.3 in)
Height (h3)	104.5 cm (41.2 in)
Height (h4)	14.2 cm (5.6 in)
Depth (d)	71.5 cm (28.1 in)
Width (w)	71.8 cm (28.3 in)

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»CellXpert® C170i in 360°«

Learn more about the new CellXpert CO_2 Incubators and view it in 360°

The latest Eppendorf incubators are prepared to satisfy your culturing needs and make your growing experience more comfortable and efficient.

> Would you like to compare with devices of other manufacturers?
> Interested in current promotions?
> Or how about seeing the CellXpert live?

www.eppendorf.com/CellXpert



DOMINIQUE DUTSCHER SAS

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eppendorf@eppendorf.com · www.eppendorf.com

www.eppendorf.com/CellXpert

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