Benchmark Scientific

SureTherm™ CO_2 Incubator Series with

IncuView™ LCI

LIVE CELL IMAGING





IncuView™ LCI

Integrated microscope & monitor for real-time viewing of cells in a controlled CO_2 environment

Internal microscope option
monitor cells on display or remotely with smart-device

Precision temperature control
six-sided heating, ambient +5 to 60°C

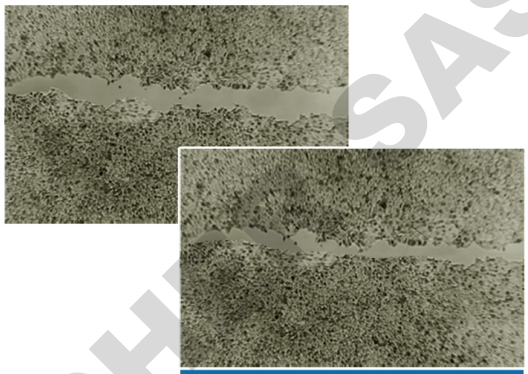
Excellent accuracy and recovery
with dual beam IR sensor for measuring CO_2

Heated door and door frame
prevents chamber/door condensation

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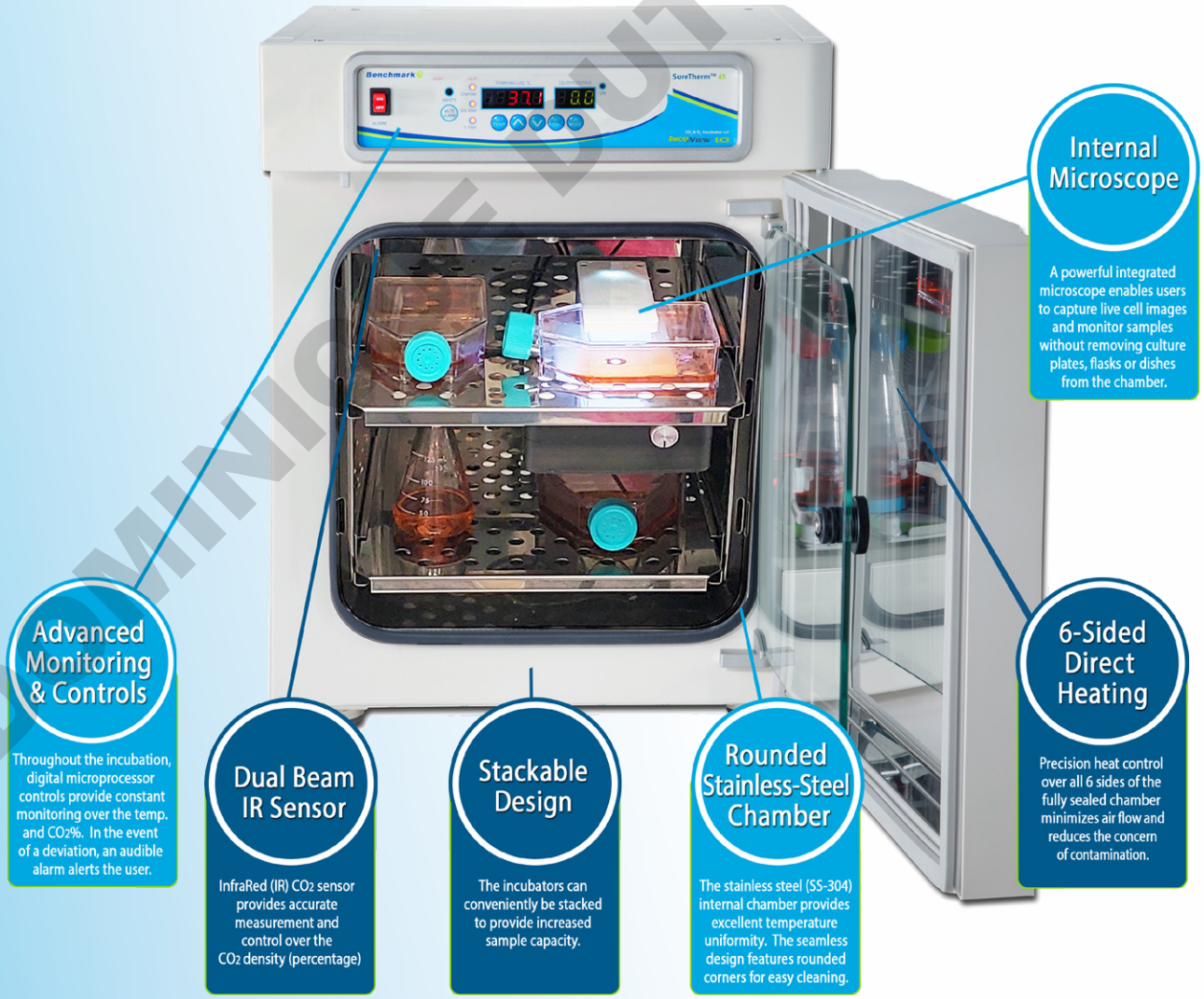
Cell cultures depend on optimized growth conditions in order to thrive. With precise temperature and CO_2 control, Benchmark's SureTherm™ Incubators provide the perfect environment for your cultures. All SureTherm Incubators feature a proprietary heat distribution system that combines six sided heating with a low speed internal fan. Air is circulated uniformly throughout the chamber without air exchange from the external environment. This results in a controlled, protected environment with minimal temperature fluctuations (within 0.1°C).

These are the first and only incubators equipped with our (patent pending) **IncuView™ LCI** (Live Cell Imaging) technology for viewing cells in "real time". An internal microscope and large, external display allow cells to be viewed without removal from the incubator, eliminating the inherent temperature fluctuations and risk of contamination. Cells are easily viewed on the large, integrated display or viewed locally or remotely with a wifi enabled phone, tablet or computer.*



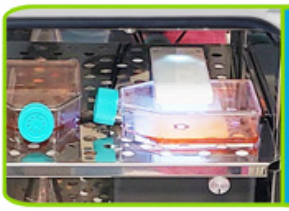
Capture time-lapse images

* Cell viewing requires optional IncuView Integrated Microscope Shelf (Item H3565-45-LCI or H3565-180-LCI.)
Remote viewing requires a computer with wifi and LAN connections.



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SureTherm CO_2 Incubator Features:



Internal microscope

SureTherm ™ CO_2 incubators offer an optional, integrated microscope for viewing cells in their CO_2 environment. Less frequent removal of cells reduces the risk of sample contamination and cell damage.

Large Display Monitor

The IncuView™ LCI (Live Cell Imaging) system includes an internal microscope that wirelessly connects to the external monitor and allows for real-time monitoring of cells, visualization of samples and capturing time-lapse images.





Oxygen control

In addition to CO_2 control, oxygen control is available to create hypoxic conditions. Cells cultured in hypoxia are often found to show lower levels of stress and grow more quickly. (Available in 180L model only.)

Heated door and frame

The six-sided, direct heating design provides the highest level of temperature uniformity (±0.4°C). In addition, the heated door and door frame prevent the formation of condensation on the inner glass door.



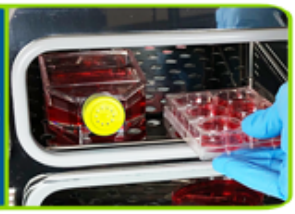


High heat decontamination

Sample contamination is a leading cause of unhealthy cells. A convenient high heat decontamination cycle exposes the chamber to 125°C for 8 hours to eliminate this risk. (Available in 180L model only.)

Split inner door

Each time the door of a CO_2 incubator is opened, the risk of sample contamination increases. Our unique design features a split inner glass door for easy sample access. This eliminates opening the entire door, reducing the risk of contamination and fluctuation of temperature/CO_2 levels. (Available in 180L model only.)



Technical Data:

Model:	45 Liter	180 Liter	180 Liter - High Heat Decontamination	180 Liter - O_2 Control and Heat Decontamination
Item Number:	H3565-45	H3565-180	H3565-180HD	H3565-180HDO2
Temperature Range:	Ambient +5 to 60°C			
Temperature Accuracy:	±0.1°C*			
Temperature Uniformity:	±0.4°C*			
Temperature Increment:	0.1°C			
Temperature Stability:	0.1°C*			
CO_2 Range:	0 to 20%			
CO_2 Increment:	0.1%			
CO_2 Accuracy:	±0.1%			
CO_2 Sensor:	Dual Beam IR CO_2 Sensor			
Heat Decontamination:	No		Yes	
O_2 Range:	N/A		N/A	0.5 to 20%
O_2 Accuracy	N/A		N/A	±0.3%
Chamber Dimensions (W x D x H):	13.2 x 14.2 x 15.4 in. 33.5 x 36.1 x 39.2 cm	18.7 x 20.8 x 28 in. 47.3 x 52.8 x 71 cm	18.7 x 20.8 x 28 in. 47.3 x 52.8 x 71 cm	18.7 x 20.8 x 28 in. 47.3 x 52.8 x 71 cm
Chamber Volume:	45 Liter	180 Liter	180 Liter	180 Liter
Split Inner Door:	N/A			6 Compartments
Chamber Material:	Stainless Steel			
Exterior Dimensions (W x D x H):	16.5 x 18.3 x 21.8 in. 42 x 46.5 x 55.3 cm	22 x 26.2 x 37.2 in. 56 x 66.5 x 94.5 cm	22 x 26.2 x 37.2 in. 56 x 66.5 x 94.5 cm	22 x 26.2 x 37.2 in. 56 x 66.5 x 94.5 cm
Weight:	77 lbs / 35 kg	172lbs / 78kg	172lbs / 78kg	172lbs / 78kg
Electrical:	120V or 230V, 50-60Hz			
Power Consumption:	300W	420W	700W	700W

* At a set tempertaure of 37.0°C

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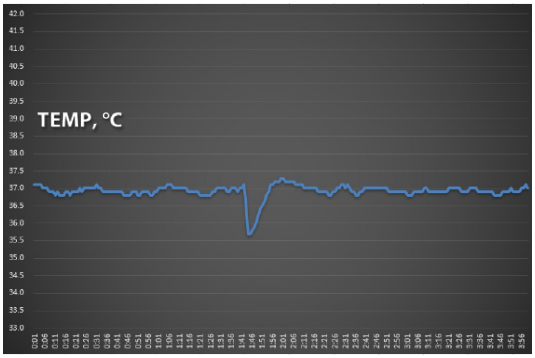


Fig. 1. Temperature Recovery Chart: Chamber temperature progression over a 4 hour period with the door being opened for 30 seconds (180 Liter model).

Technical Data:

	IncuView Microscope Specifications
Magnification:	200x
Field of View:	1 x 1mm
Resolution:	2 µm
Illumination:	Top and bottom
Image Format:	5MP (2592 x 1944 pix)
Video Format:	MPEG-4 up to 1296 x 972 10FPS
Sample Vessels:	Clear flasks, dishes, plates < 8mm thick
Optics:	Brightfield or darkfield
Sensor:	CMOS
Electrical:	5V (Powered by internal micro-USB)

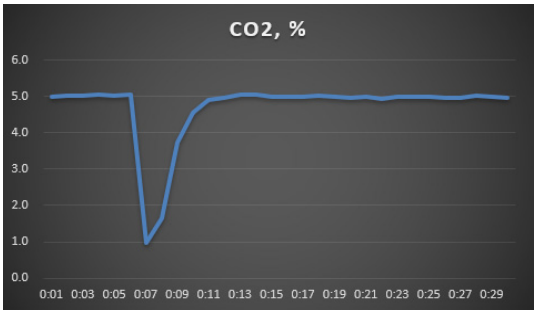
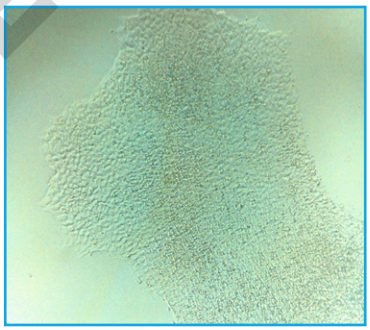


Fig. 2. CO_2 Recovery Chart: CO_2 percentage progression over a 30 minute period with the door being opened for 30 seconds (180 Liter model)



Human Neural Stem Cells
Image taken with IncuView



Human ISPC Fixed Colony
Image taken with IncuView

Ordering Information: (Optional IncuView LCI Integrated Shelf required for live cell imaging)

H3565-45*	Benchmark SureTherm CO_2 Incubator, 45 Liter, with two shelves
H3565-180*	Benchmark SureTherm CO_2 Incubator, 180 Liter, with three shelves
H3565-180HD*	Benchmark SureTherm CO_2 Incubator, 180 Liter, with High Heat Decontamination
H3565-180HDO2*	Benchmark SureTherm CO_2 Incubator, 180 Liter, with High Heat Decontamination, split window door and O_2 control

Optional Accessories

H3565-45-LCI	IncuView LCI Integrated Shelf (14 x11.5 in.) with integrated wifi microscope (for 45 Liter incubator)
H3565-180-LCI	IncuView LCI Integrated Shelf (20 x17 in.) with integrated wifi microscope (for 180 Liter incubator)
H3550-45-SH	Additional shelf (stainless steel) for 45 Liter incubators, 1 each
H3550-180-SH	Additional shelf (stainless steel) for 180 Liter incubators (20 x 17 in.), 1 each
H3550-45-SK	Stacking kit for 45 Liter incubator
H3550-180-SK	Stacking kit for 180 Liter incubator (height of top display approximately 135 cm)
H2300-REG	Regulator (optional), required for connecting to a CO_2 source
H3565-O2REG	Regulator (optional), required for connecting to an O_2 source
BT4001*	Orbi-Shaker ™ CO_2, remote controlled orbital shaker with flat mat platform (13 x 12 in.) *For 45 Liter and 180 Liter models.* Additional platforms, clamps & accessories available, visit www.benchmarkscientific.com
BT4011*	Orbi-Shaker ™ CO_2 XL, remote controlled orbital shaker with flat mat platform (16 x 16.5 in.) *For 180 Liter models ONLY.* Additional platforms, clamps & accessories available, visit www.benchmarkscientific.com

*115V with USA Plug. For 230V with EU plug, add (-E)

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Benchmark Scientific
P.O. Box 709 Edison, NJ 08818 USA
Ph: 908-769-5555 EM: info@BenchmarkScientific.com