Culture Safe CO_2 Incubator Touch Range

LEEC

Spirit of Innovation

Introduction to LEEC

LEEC's mission statement of "aiming to exceed customer expectations for quality, delivery and cost through continuous improvement and customer interaction" is the philosophy behind the company.

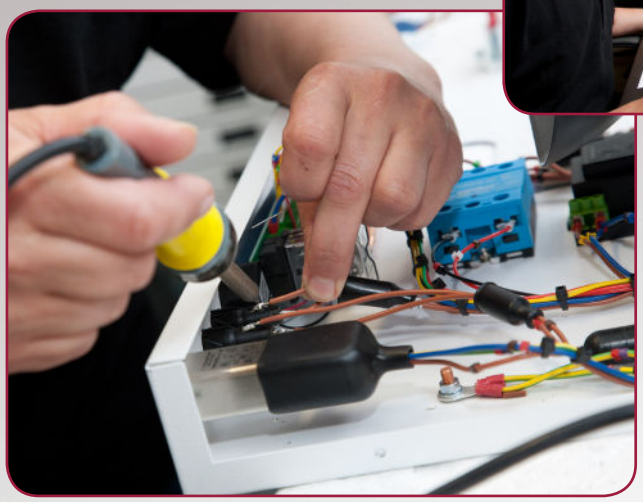
The management team operate the ISO 9001 quality models across the various departments. The combination of mission statement and the management system has created a modern, dynamic, forward thinking company.

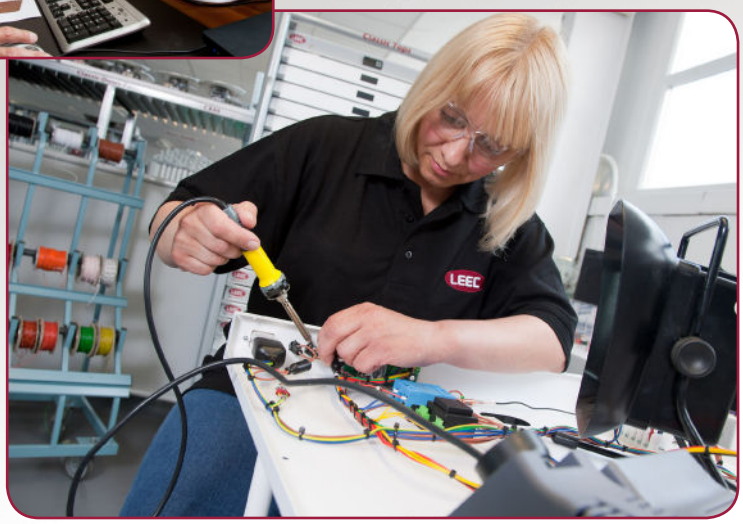
The Touch range of LEEC CO_2 incubators have been developed by listening to our customers and using the latest cutting edge technologies. This has helped LEEC to develop a range of CO_2 incubators that is unsurpassable and class leading.

LEEC are striving to continuously exceed customer expectation by incorporating user friendly touch screen technologies and the world's first 200°c dry heat sterilisation cycle. This has been independently tested at the Health Protection Agency in Porton Down, UK.

All LEEC employees are very proud of the high standards of quality achieved, in all the equipment manufactured at our head office in Nottingham, England and relish the opportunity to exhibit these products to our worldwide customer base.

Paul Venners
Managing Director





Frequently Asked Questions

Why consider the LEEC Culture Safe versus other brands?

LEEC has almost 60 years experience of manufacturing laboratory incubators. LEEC developed the first CO_2 incubator that automatically injected and controlled CO_2 by the use of a thermal conductivity (T.C.) CO_2 detector. LEEC developed and patented this world leading technology at this period in time, hence manufacturing the world's 1st automatic CO_2 incubator.

As you would expect from such a forward thinking innovative company, LEEC has continued its relentless R&D programme and now offers world class leading CO_2 incubators with many more built-in inherent features and advantages, whilst still remaining competitively priced.
Through continued R&D development, LEEC now offers as standard, state of the art drift free infra red (IR) CO_2 sensors across the complete range of ALL its culture safe models.

Why consider Drift Free Infra-Red instead of conventional thermal conductivity (T.C.) CO_2 Sensors?

The LEEC IR CO_2 sensor offers the latest technology and is completely drift free. T.C. CO_2 sensors only measure accurately at the desired 88-92% relative humidity (%RH). After the inner glass door is opened the T.C. sensor is measuring inaccurately up to a period of 1 hour after the door closure. TC technology is much older technology and its huge disadvantage is that accurate % CO_2 can only be achieved once the relative humidity (%RH) has recovered back to 88-92%RH, which is typically up to 1 hour.

For very important samples and cell lines this is simply not acceptable. The pH level of the culture media will not recover and cell desiccation may result as a consequence.

What is the benefit of the LEEC Culture Safe being fitted with a drift free infra red CO_2 sensor?

All LEEC Culture Safe CO_2 incubators are fitted with a premium quality state of the art drift free infra red CO_2 sensor. This ensures accurate CO_2 measurement at all instances in time and total peace of mind that your samples are culturing at the correct % CO_2 level all the time.

This eradicates the need for any additional auto-referencing / zeroing of the CO_2 sensor which is sometimes necessary on other manufacturers incubators to stop drifting of CO_2 calibration and carries the heavy the risk of contamination introduction into the incubator each time the auto-referencing / zeroing is performed.

Why consider a direct heat CO_2 incubator without fanless technology instead of a fan assisted incubator?

LEEC has developed a clever six sided heating system controlled by using a state of the art PID controller. There is also independent control of both the door and the base (located under the water tray) allowing for extremely accurate and precise control of temperature inside the inner chamber.

This precise control eliminates the need for a fan (refer to benefits of fanless) and is accurately achieved by the most gentle convection of air movement inside the chamber. This prevents any turbulence and possible rapid spreading of contamination introduced into the chamber by the higher turbulent air flow created by fan assisted incubators.

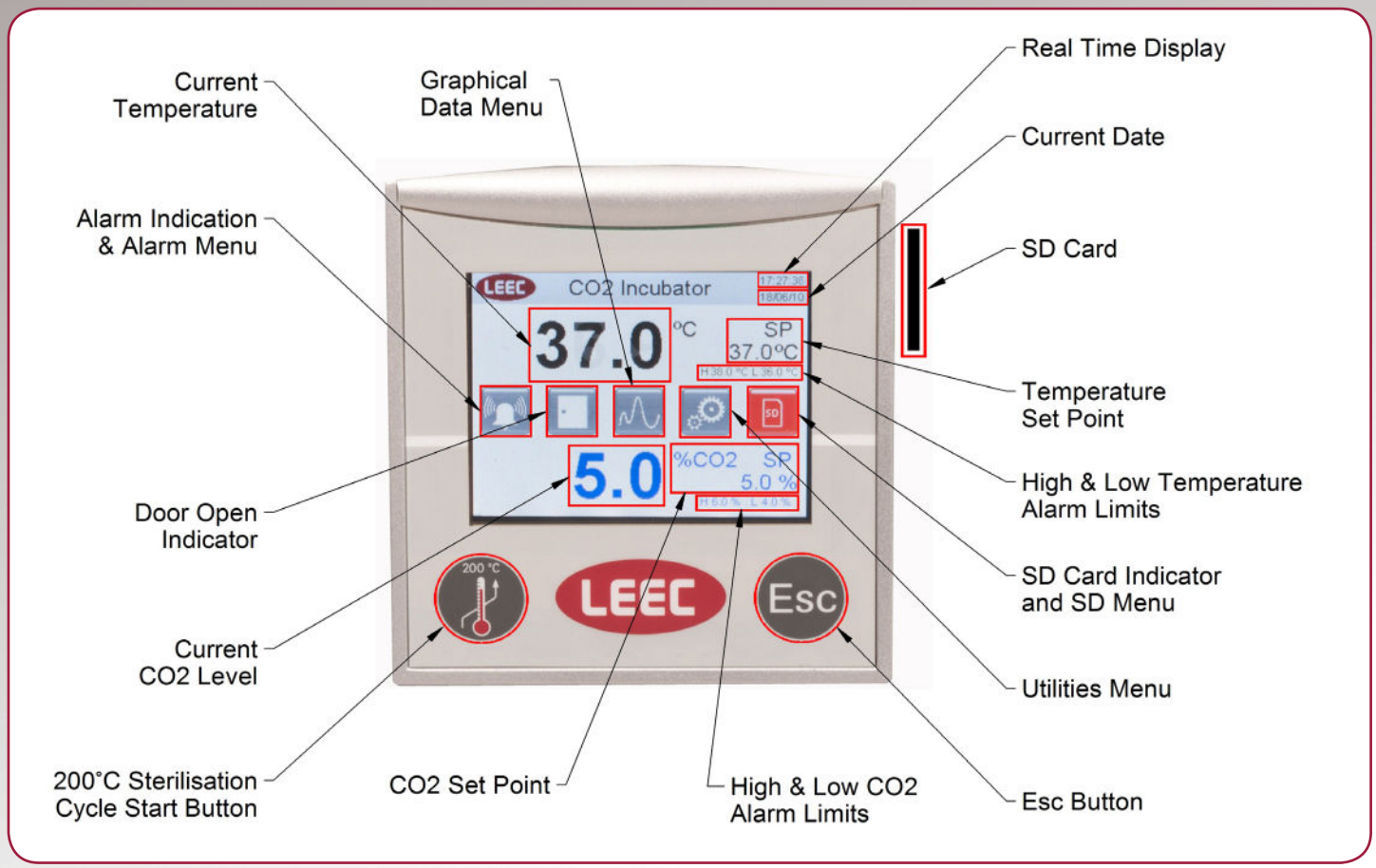
Another great benefit is a much larger internal chamber capacity against rivals with fans fitted with considerably smaller external dimensions. The LEEC Culture Safe CO_2 range with its very compact external dimensions will comfortably sit on a laboratory bench or even under the laboratory bench if more convenient, many other brands are simply too large to fit in either location.

Easy to use Icon Lead Touch Screen Control System

SD - LEEC offers the SD card facility of data collection

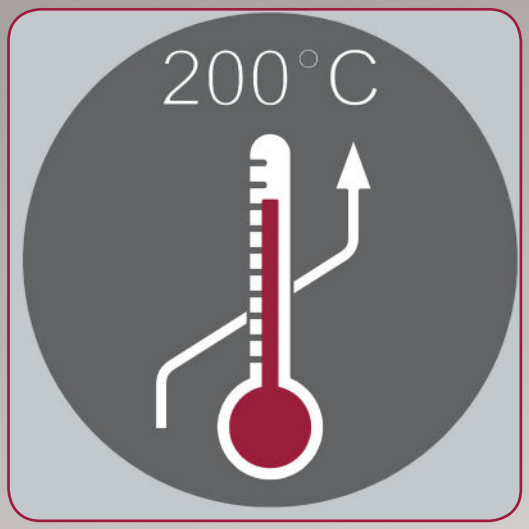
The new state of the art PID controller is designed to be as user friendly as possible, allowing the user to quickly access the required menus via a simple icon navigation system.

On board text and graphical data logging of temperature, CO_2 and O^2 (if fitted) with a minimum of 72 hours graphical data logging and 100 text event logs, all conveniently saved as .csv files for viewing in MS Excel® from a removable SD card.



World's first 200°c Sterilisation Cy-

Independent evaluation of effectiveness of LEEC 200°c sterilisation cycle against all spores and bacteria commonly associated to be possibly present in laboratory incubators:

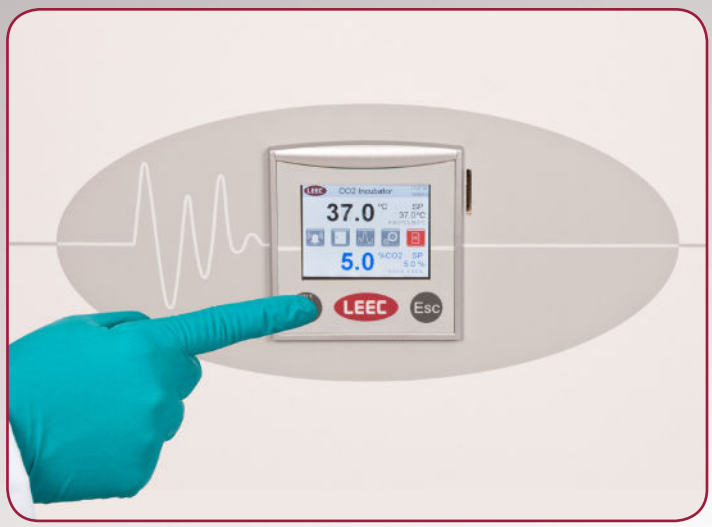


The LEEC Culture Safe CO_2 incubator has been independently evaluated for the effectiveness of its 200°C sterilisation cycle. The sterilisation cycle was proven to be effective against the stubborn Geobacillus stearothermophilus spores. atcc 12980 dried on coupons (Apex Laboratories, Inc. Lot N°. K00001) Aspergillus spores ATCC 16404 (formally Aspergillus niger) and Bacillus atrophaeus spores NCTC dried on coupons (prepared at HPA).

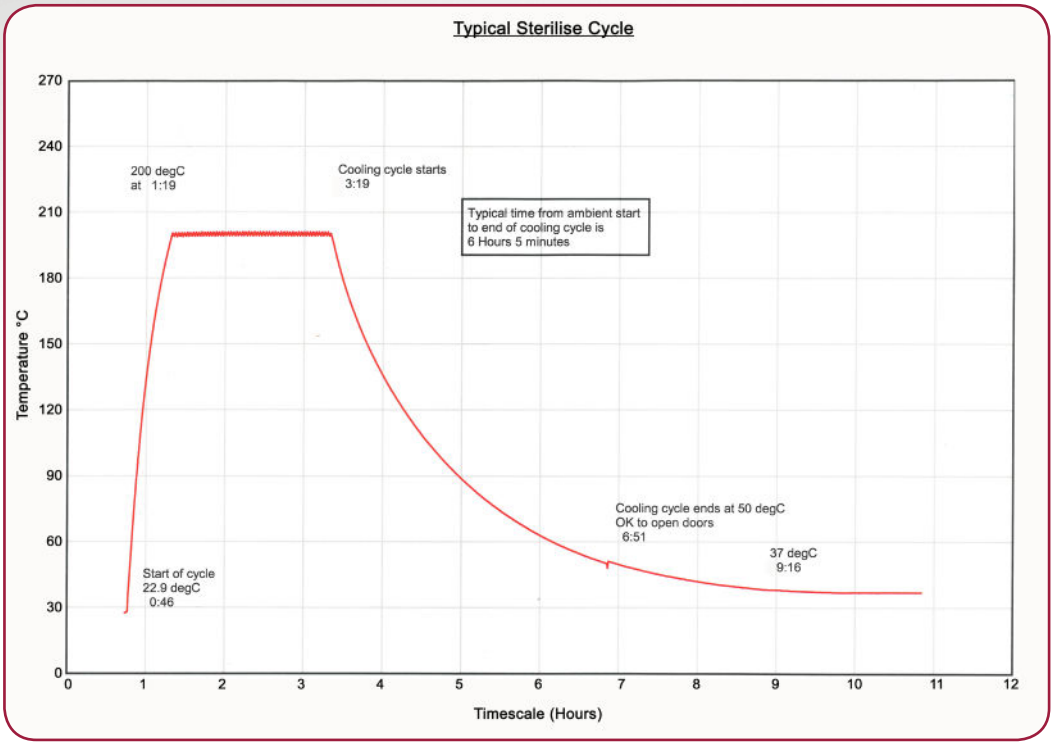
Please view the full report on LEEC's website - www.leec.co.uk

* No need to remove IR CO_2 sensor, remains in situ during 200°C Sterilisation cycle

Ensure the water tray is empty of all water, make sure both the inner and outer door are closed securely



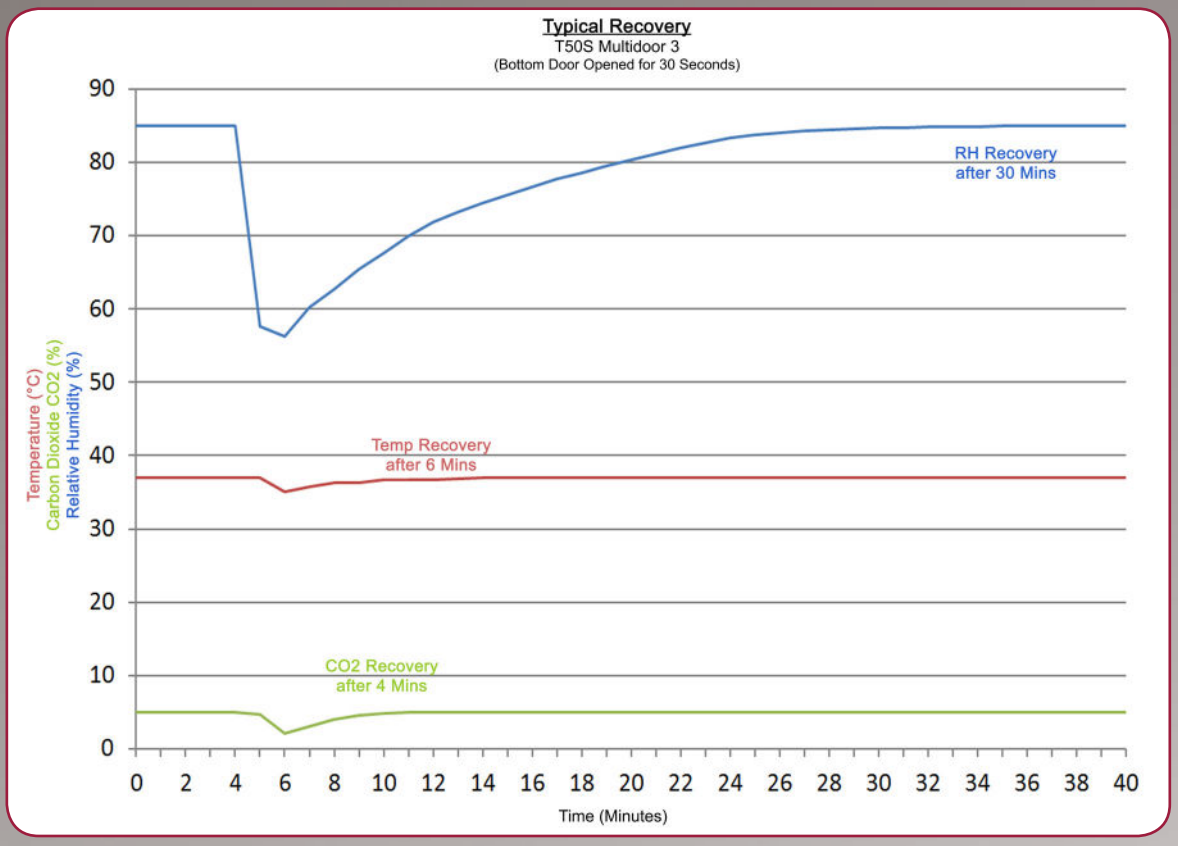
start the 200°C Sterilisation Cycle



Recovery Graphs

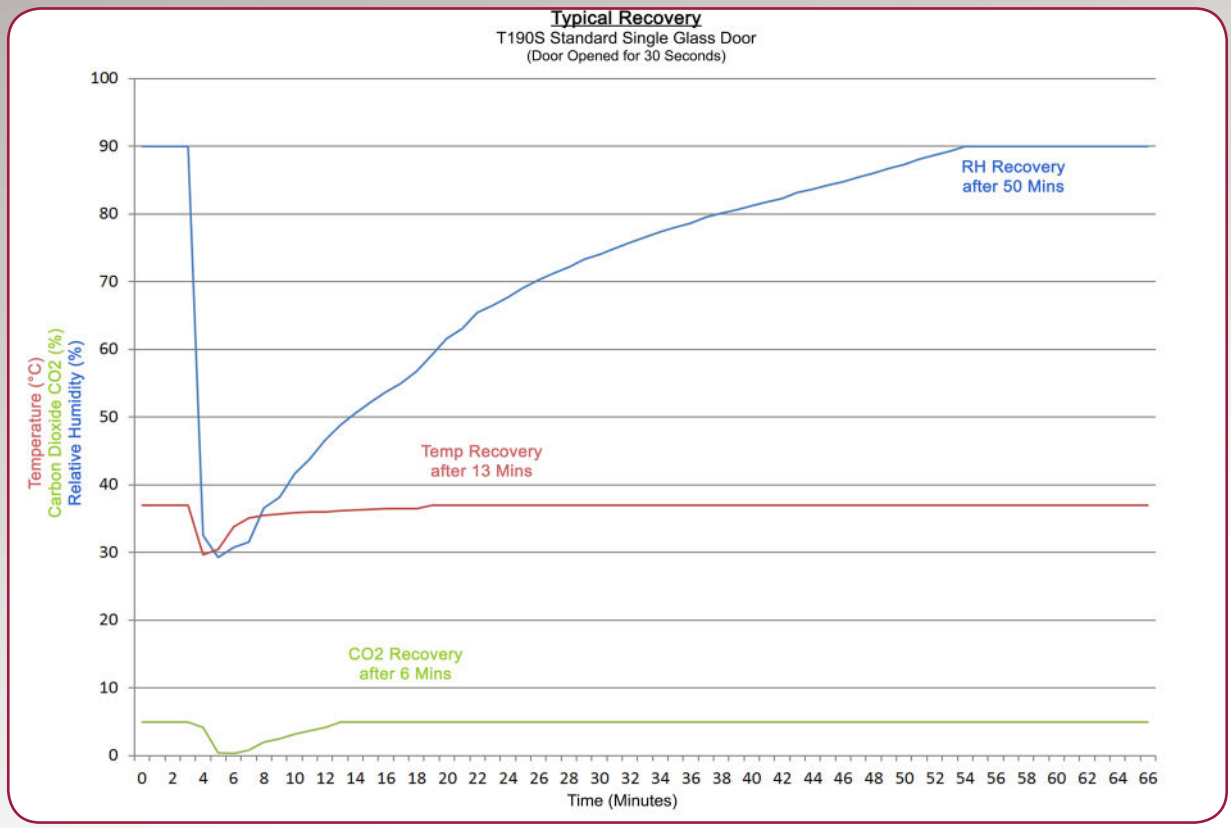
Typical recovery graphs for a LEEC Culture Safe Touch 50S model with 3 inner door option fitted:
The graphs below in Figure 1, illustrate typical recovery times for *temperature, *%CO2 and *%RH, after the bottom compartmental glass door is opened for the duration of 30 seconds and then closed.
*Quicker recovery times are achievable with a 6 Inner door option.

Figure 1



Typical recovery graphs for a LEEC Culture Safe Touch T190S model with a standard single glass door fitted:
The graphs below in Figure 2, illustrate typical recovery times for temperature,* %CO2* and %RH*, after the standard glass door is opened for the duration of 30 seconds and then closed.
*Quicker recovery times are achievable with the 8 inner door option.

Figure 2



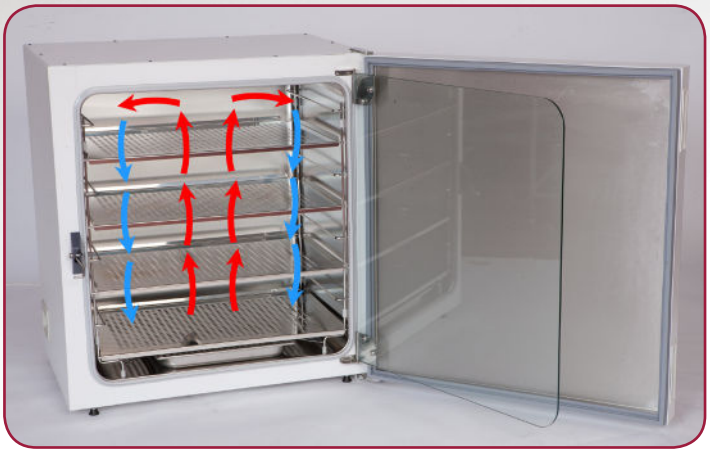
Options & Accessories, All Touch models

Options		Accessories	
OXY 1-19	1-19% Oxygen control (available on Touch 190S & Touch 50S models)	PTSK	Stacking kit for stacking 2 x T190 or P190
8ID	8 inner door option (available on all 190 litre models)	PRV2	Two-stage CO2 cylinder pressure reducing valve with gauges
6ID	6 inner door option (available on all 50 litre models)	PRVN	N2 cylinder pressure reducing valve with gauges
3ID	3 inner door option (available on all 50 litre models)	R06	In-line CO2 reducing valve with pressure gauge (2 to 30 p.s.i.)
RHDISP	%RH display (available on all Touch screen models)	PNEU	Automatic change over unit for two cylinders (CO2 or N2)
		TUBE2	**Tygon CO2 tubing 4mm internal / 6mm external**
		PTST1	Wheeled Platform for T190 or T190S

Fanless Design

The benefits of LEEC incubators being fanless

- Significantly reduced risk of contamination
- Zero vibration: eradicates any possibility of cell edging effect
- Significantly less evaporation; minimise loss of water in the water tray, hence less risk of sample evaporation and possible desiccation
- Considerably easier to clean
- Very easy and quick to remove shelves and shelf racks for ease of cleaning
- Considerably more useable space, no ducting or built in hepa to minimise useable space
- No hidden areas or crevasses that can be difficult to clean
- No fan maintenance
- No extra costs to replace expensive fan Hepa filters and associated health risks in doing so
- Helps to minimise loss of chamber conditions during inner glass door opening
- No turbulent airflow that can spread contamination introduced into the inner chamber quickly.



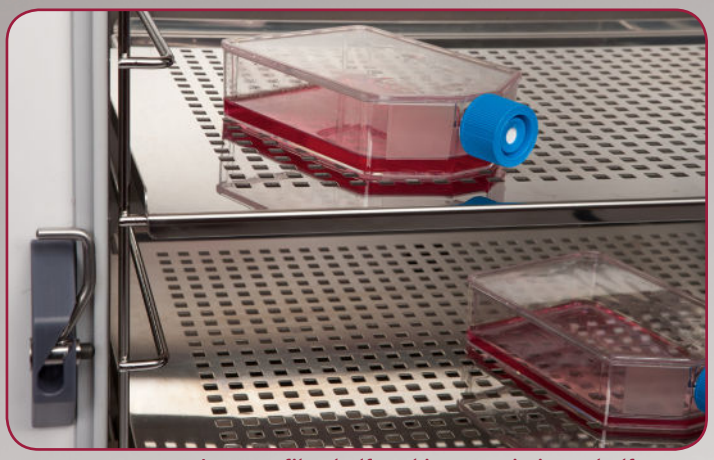
Very gentle air movement by natural convection

We have designed our incubator specifically to offer the lowest risk of contamination. Contamination which can enter into an incubator from the laboratory, having been introduced by clothing, by individual's hair, by ventilation system, by open windows or by the soles of shoes. Once in the incubator of course the contamination finds it easy to lock onto the fan, the fan then spreads the contamination effectively and makes the problem even greater. The fan remains the single most difficult item component in an incubator to clean. For this reason those people who have designed incubators with fans have had to put an expensive Hepa filter in front of the fan to protect it. This adds another dimension of risk and indeed cost. Firstly, the filter has to be changed on a regular basis if it is to be effective. The process of that change means that contamination can spill from the dirty filter during the process of change. Secondly the door is open for a long time during that change process and more contamination can enter and lock onto the fan. Thirdly the process is time consuming and costly. Fourthly if the filter is not changed then the incubator system is not working to its best capacity. Fifthly the fan and filter take up valuable user space within the chamber. The fan less design eradicates all the associated problems that are associated with having a fan.

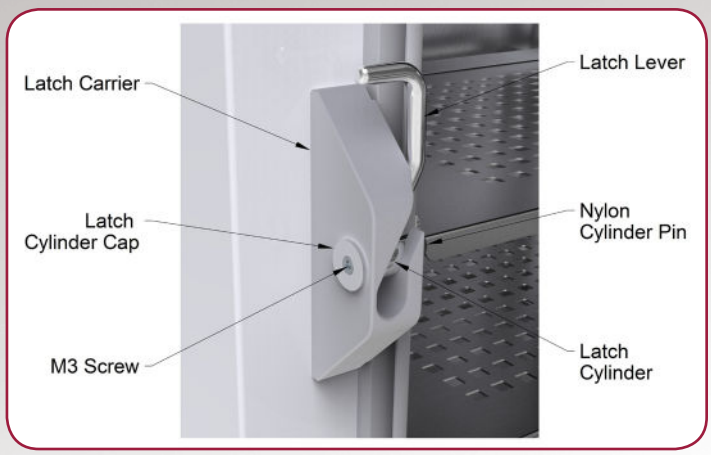
Lifting Handles

CO_2 Touch T50S

Rear Wheels, Easy Placement



Low profile shelf racking, maximises shelf space



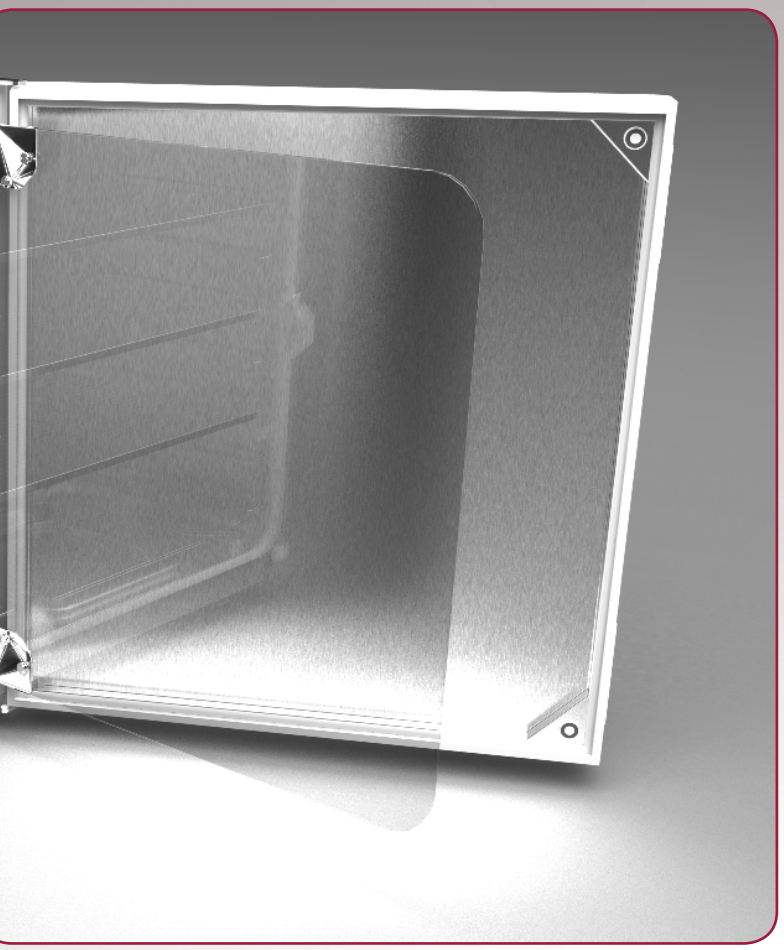
CO_2 Touch T190 Inner Glass Door Latch

Water Tray - separate heating element for increased control of humidity

Features

Touch T190S CO_2 incubator with 8 inner glass door option fitted.

Touch T50S CO_2 incubator with 3 Inner glass door option fitted

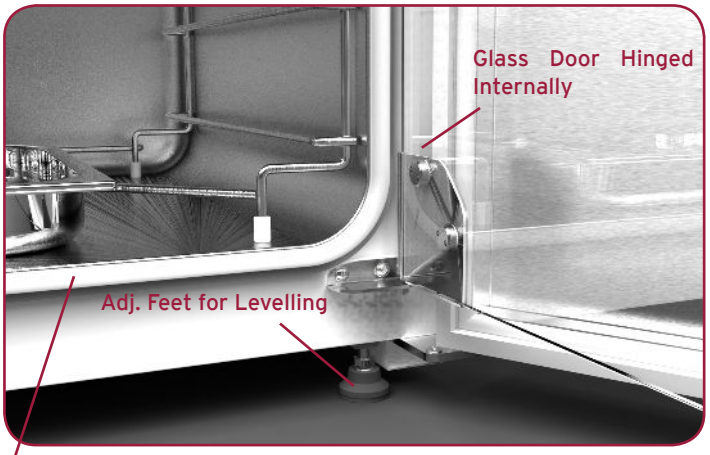


CO_2 Touch T190S

Shelving - Anti tilt easily removable shelf dividers, built in handle lip

Easy to clean robust heavy duty outer door seal

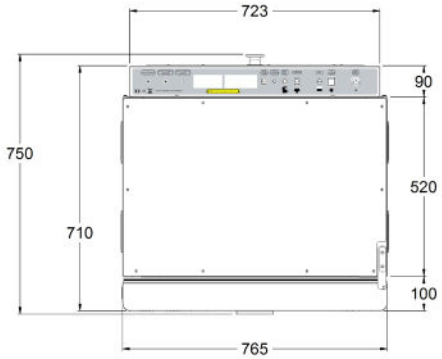
Inner Chamber & Racking - Drawn Chamber - Seamless Design. Easy to Remove - Rounded Corners

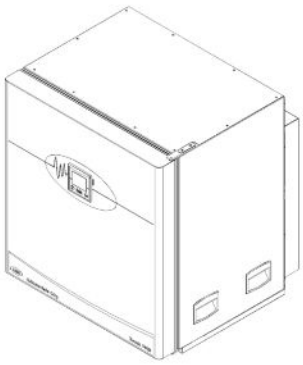


Inner Door Seal Airtight - Round Corners

T190 Technical Specifications

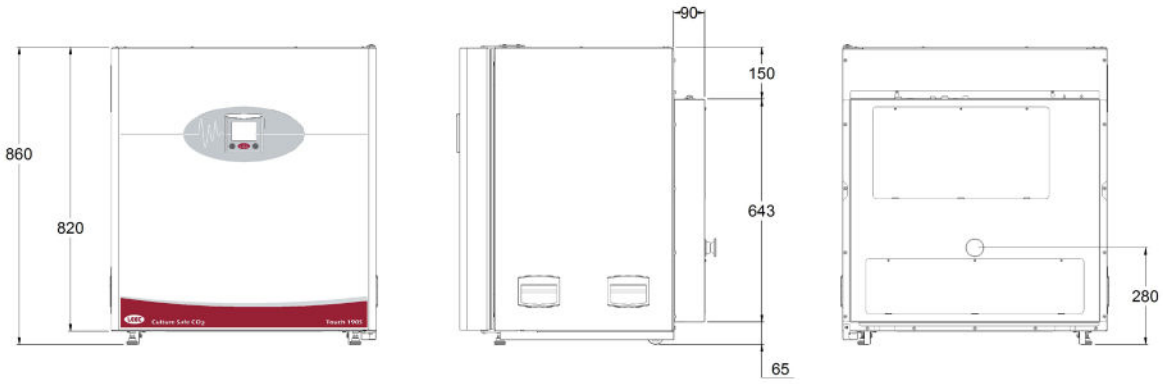
TECHNICAL SPECIFICATIONS CULTURE SAFE TOUCH 190 & 190S							
TEMPERATURE MANAGEMENT		**CO_2 GAS MANAGEMENT**		**O_2 GAS MANAGEMENT**		**DIMENSIONS**	
Range	5°C above ambient to +60°C	Range	0% to 20%	Range	1% to 19%	Chamber (mm)	632(w) x 686(h) x 440(d)
Control	0.1°C	Control	± 0.1%	Control	± 0.1%	Chamber (inches)	24.9(w) x 27(h) x 17.3(d)
Stability	± 0.1°C @ 37°C	Stability	± 0.2%	Stability	± 0.25%	External (mm)	765(w) x 862(h) x 734(d)
Uniformity	± 0.25°C @ 37°C	Uniformity	± 0.2%	Uniformity	± 0.25%	External (inches)	30.1(w) x 34(h) x 28.9(d)
ELECTRICAL		CO_2 Sensor	IR	O_2 Sensor	Electrochemical	Shipping Container (mm)	925(w) x 1080(h) x 850(d)
Voltage	230 vac 50/60Hz	CO_2 inlet pressure	min 5 psi max 10 psi	O_2 inlet pressure	min 5 psi max 10 psi	Shipping Container (inches)	36.4(w) x 42.5(h) x 33.5(d)
Power	380w					**WEIGHT**	
Power, High Temp. Option	1800w (T190S)		min 0.3 bar max 0.7 bar		min 0.3 bar max 0.7 bar	Net	94.5kg touch 190 104kg touch 190s
Consumption to 37°C	0.058 kwh	**HUMIDITY**				Shipping	109kg touch 190 117.5kg touch 190s
		RH (@37°C +5%)	upto 95%				

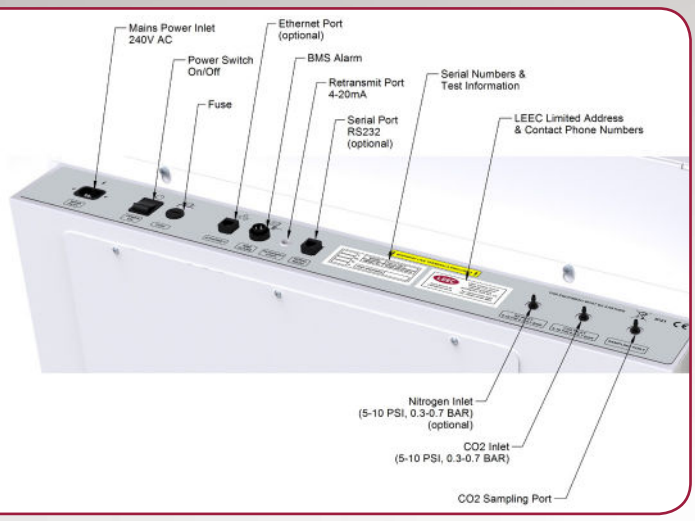




Options

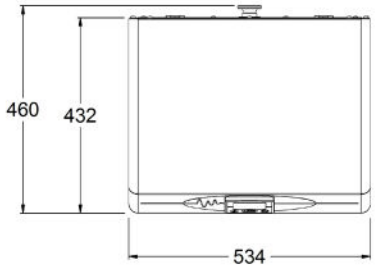
- Stacking Kit
- 1-19% oxygen control option
- % RH Display
- Wheeled Platform
- 8 Inner door option

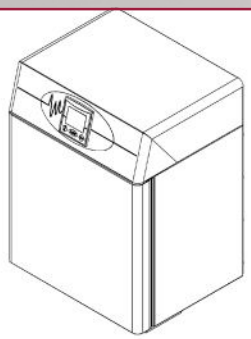




T50 Technical Specifications

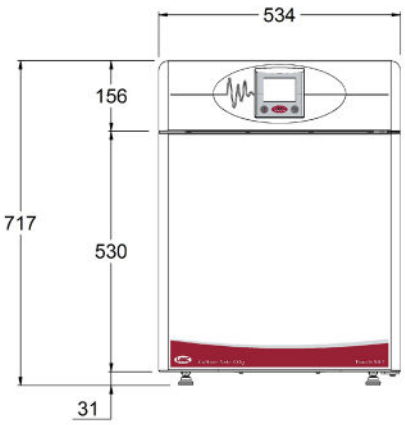
TECHNICAL SPECIFICATIONS CULTURE SAFE TOUCH 50							
TEMPERATURE MANAGEMENT		**CO_2 GAS MANAGEMENT**		**O_2 GAS MANAGEMENT**		**DIMENSIONS**	
Range	5°C above ambient to +60°C	Range	0% to 20%	Range	1% to 19%	Chamber (mm)	402(w) x 402(h) x 300(d)
Control	0.1°C	Control	± 0.1%	Control	± 0.1%	Chamber (inches)	15.8(w) x 15.8(h) x 11.8(d)
Stability	± 0.1°C @ 37°C	Stability	± 0.2%	Stability	± 0.25%	External (mm)	534(w) x 717(h) x 460(d)
Uniformity	± 0.25°C @ 37°C	Uniformity	± 0.2%	Uniformity	± 0.25%	External (inches)	21.0(w) x 28.2(h) x 18.1(d)
ELECTRICAL		CO_2 Sensor	IR	O_2 Sensor	Electrochemical	Shipping Container (mm)	800w x 960h x 600d
Voltage	230 vac 50/60Hz	CO_2 inlet pressure	min 5 psi max 10 psi	O_2 inlet pressure	min 5 psi max 10 psi	Shipping Container (inches)	31.5w x 37.8h x 23.6
Power	350w					**WEIGHT**	
Power, High Temp. Option	950w (T50S)		min 0.3 bar max 0.7 bar		min 0.3 bar max 0.7 bar	Net	38kg T50 40kg T50S
Consumption to 37°C	0.072 kwh	**HUMIDITY**				Shipping	50kg T50 52kg T50S
		RH (@37°C +5%)	upto 95%				

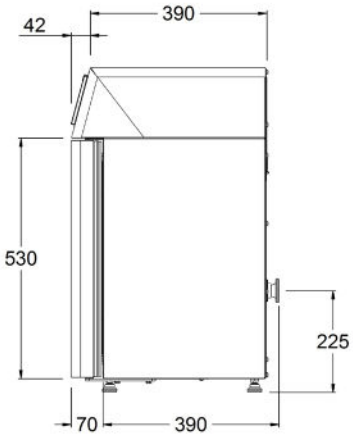


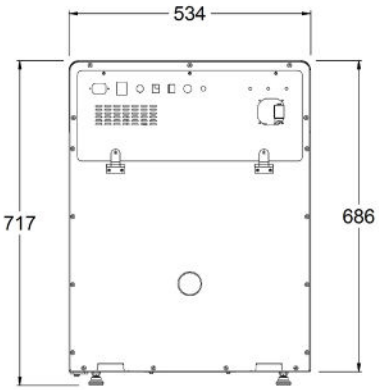


Options

- 1-19% oxygen control
- % RH Display
- 3 Inner door option
- 6 Inner door option

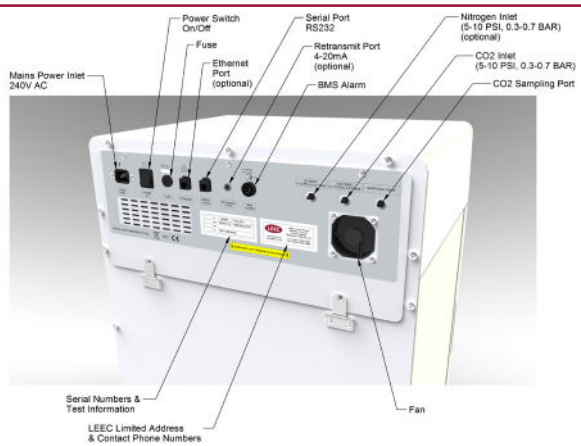






LEEC Bench Top Touch 50 & Touch 50S CO2 Incubators

50 Litres
Bench Top CO2 Incubators
Ideal for I.V.F and stem cell applications
Easy to clean and replaceable inner door seal Ideal for research of critical samples
Minimised loss of conditions on door opening
3 inner door or 6 inner door options available for faster recovery
1-19% oxygen control option available
%RH Display option available



Other LEEC Products

Warming Cabinet

Culture Safe **Precision Models**

Classic Incubator Range

Standard Drying Cabinets

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