MEDITECH
CO2 Incubator

Green Technology for life

Technology, Quality, Reliability and Repeatability

Environmentally friendly CO2 Incubator powered by Meditech Technology for safe cells and Tissue cultures

ISO 9001, ISO1400, ISO13485, CE and WHO-GMP certified.

Meditech®

Why Meditech CO2 Incubator

Discover Technology, Quality, Reliability and Repeatability

Meditech CO2 incubators are trusted by scientist worldwide for their valuable cultures than any other brand. Meditech CO2 incubators provide optimal growing conditions, outstanding contamination prevention and proven reliability. A high temperature decontamination function that eliminates the need for separate autoclaving and reassembly of components.

Clean room like air quality is obtained using HEPA air filtration that surrounds the cells. There is a high choice of 100% pure copper or electrolytic polished stainless steel interior surface. Hence Meditech CO2 incubators lets you culture with confidence .

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Optimize Cell Growth through Advanced Technology, Quality and Reliability

Enhanced capacity

1. Table Top to Large Capacity Models
2. Choice of Volume 50 L to 821 L
3.Stackable Models for space constraints Labs
4.Adjustable Shelves - Space for Stirrers, Large samples, Shakers and cultural devices

FEATURES

- **Reversible door swings**
- **Solid copper interiors or polished Stainless steel**
- **Easy-to-clean coved corners and convenient access ports**
- **Sturdy adjustable shelves, easily removed without tools**

Quality chamber construction

1. Light Weight – Direct Heat Technology
2. Water Jacketed Temperature Designs for protection against unexpected power failures.
3. Decontamination with Direct Heat Technology.
4. Meditech CO2 incubators are designed for precise reliable control and tight uniform values
5. All CO2 incubators confirm to strickest electrical standards

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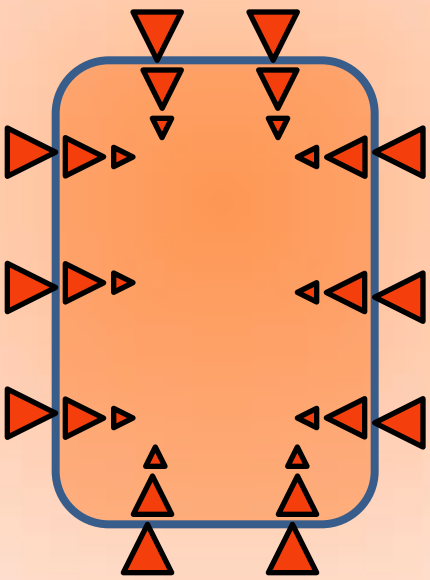
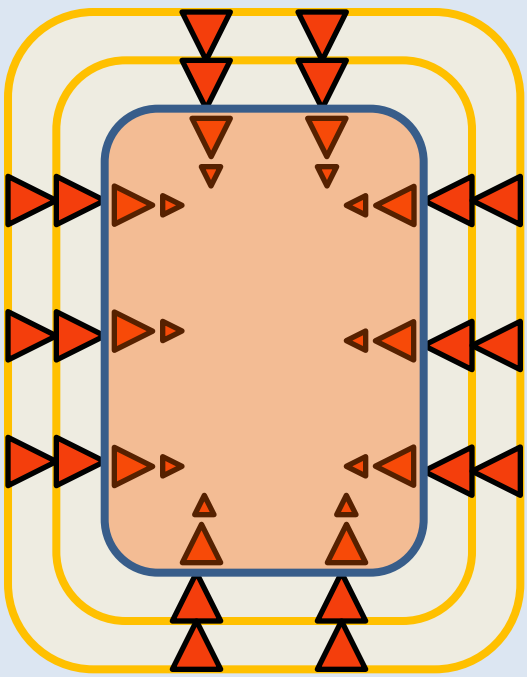
Technology

Direct Heat vs Water Jacketed

Direct Heat
Even Temperature distribution throughout the entire chamber. Efficient High Performance heaters located on every chamber surface.



Water Jacketed
Outstanding temperature stability supplied by dual layer of water and high quality of insulation. Unique Tripple wall construction



Complete contamination control

Protect your cultures with proven technologies
Our advanced contamination control technologies are designed to protect your valuable cultures and save you time and resources spent on fighting contamination while providing security for your work. Your cultures are continuously protected 24 hours per day, 7 days per week. Convenient on-demand high temperature sterilization is designed to eliminate contamination and simplifies your cleaning procedures.

3-Way protection against contaminants

(1) High-efficiency ISO Class 5 air purity
In-chamber HEPA airflow system filters entire chamber volume every 60 seconds, removing airborne biological and particulate contaminants, with ISO Class 5 (Class 100) clean room air quality within five minutes after door opening.

(2) 140° C dry heat sterilization
This safe and effective overnight high-temperature sterilization cycle is proven to effectively eliminate bacteria, mold, yeast, mycoplasma and even resistant spores, simplifying cleaning protocols and protecting cultures and personnel.

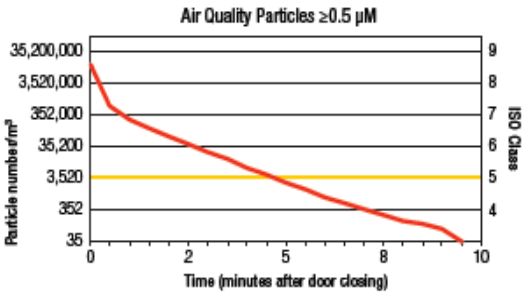
(3) Full humidity control with convenient external water reservoir
An external water supply allows refilling without opening the chamber, eliminating a potential source of water-based contaminants inside the incubator. Active humidity controls are easily adjustable and at-a-glance water level indicator helps prevent sample desiccation.

ISO Class 5 Clean room Conditions - Closed Loop HEPA Filtration

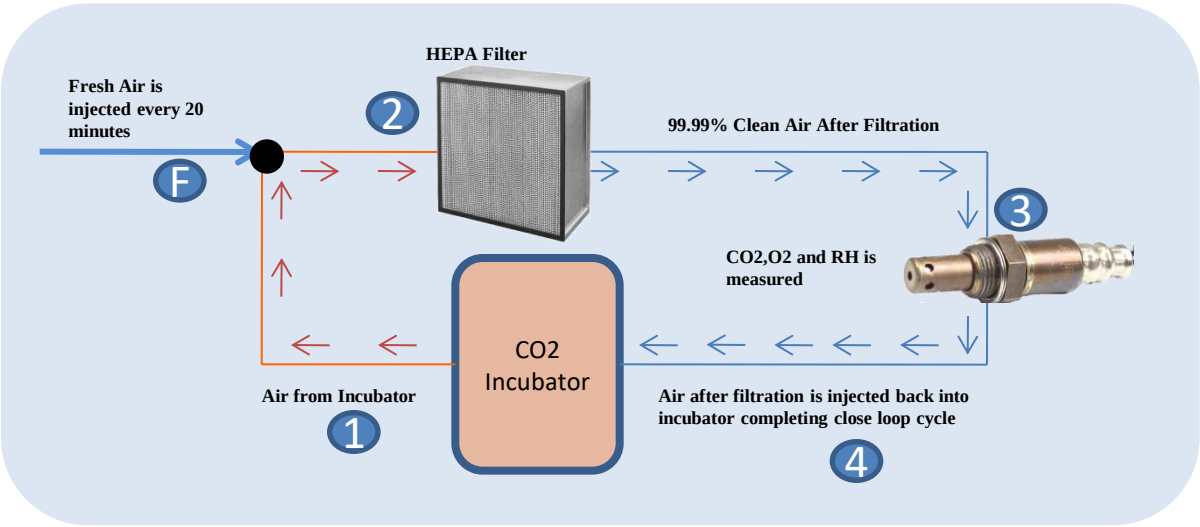
Airborne particulates are a primary source of contamination in most lab settings. Meditech advanced HEPA filter technology protects your cultures, providing ISO Class 5 clean room-like air quality conditions within only five minutes after a 30- second door opening.

• Chamber air is filtered every 60 seconds to ensure air quality

• Featuring a space saving configuration, the HEPA filter is readily replaceable with minimal cost



HEPA Air Filtration For Air Purity



Steps

1. Air from incubator is drawn by pump
2. Air is injected into HEPA filter for 99.99% purification
3. Air after purification is passed through sensor to measure CO2, RH and O2.
4. Air is injected bank to the incubator.
5. Fresh air from atmosphere is injected into the system every 20 minutes. Decision taken by intelligent controller if its required.

The Meditech Control system maintains a positive pressure inside the incubator to eliminate contaminated air to enter inside when the door is open. There is a close loop system continuously filtering chamber air through Hepa filter.

Meditech offers 2 Types of Decontamination and sterilization

1. **140° C dry heat sterilization**
2. **90˚C moist heat decontamination**

(1) 140° C dry heat sterilization

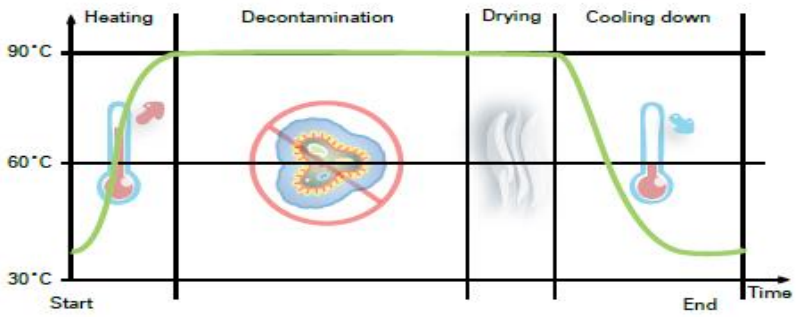
This safe and effective overnight high-temperature sterilization cycle is proven to effectively eliminate bacteria, mold, yeast, mycoplasma and even resistant spores, simplifying cleaning protocols and protecting cultures and personnel.

High temperature sterilization for easy cleaning with push-button simplicity
Conveniently decontaminate your incubator using an on-demand high temperature cycle and eliminate the need for separate autoclaving and re-assembly of components

- Automatically radiates heat uniformly to all interior surfaces, requiring no post-cycle clean up, and returns quickly to selected operating conditions
- Independent third party tests prove the elimination of biological contaminants, including fungal mold and bacteria including mycoplasma
- Avoids the physical constraints and variation of UV germicidal lamps and on-going costs, handling and storage of potentially toxic germicides

(2) 90˚C moist heat decontamination

Decontamination cycle
a look at Meditech rapid, overnight decontamination cycle



Decontamination cycle

While every precaution is taken to avoid susceptibility to contamination, an easy to use, maintenance free decontamination cycle is standard for added peace of mind. The incubator utilizes a time-tested, effective method of decontamination. Meditech 90˚C moist heat decontamination cycle is a scientifically proven method for safe and effective decontamination. Unlike dry heat decontamination cycles, extreme temperatures are not required to decontaminate. Our design further simplifies and accelerates conventional moist heat cycles by adding a drying phase, making it the fastest 90˚C moist heat decontamination cycle on the market. This new feature occurs at the end of the decontamination cycle and pumps HEPA filtered air into the incubator. The result is a sterile, dry incubator with no clean up required! The drying cycle quickly cools the incubator as the last phase of the maintenance free, overnight decontamination cycle

Safe cell and tissue cultures

The Meditech design incorporates the latest technologies to prevent contamination and to keep your cell cultures safer than ever.

The entire interior of the incubator is constructed of high grade polished stainless steel with coved corners. All of the interior metalwork components are easily removed without the use of tools. The unique “tool-less” removable interior allows for simplified routine incubator cleaning.

The exterior of the incubator is made of cold rolled steel and powder coated with antimicrobial powder paint. This additional layer further protects the incubator against contamination.

During routine door openings, the blower system automatically shuts off, minimizing the amount of air exchanged with the outside environment. CO2 gas inlets are protected with HEPA filters to ensure a pure gas supply.

(3) Full humidity control with convenient external water reservoir

An external water supply allows refilling without opening the chamber, eliminating a potential source of water-based contaminants inside the incubator. Active humidity controls are easily adjustable and at-a-glance water level indicator helps prevent sample desiccation.

TOUCH SCREEN

Meditech touch screen is designed to provide complete data visibility to monitor all CO2 incubator functions. Eye level Door mounted display for easy access. On Screen MENU, error and usage logs, data logging, performance trend graphs and multiple langauge selection.

Added culturing flexibility with variable oxygen control

Many cell types thrive best in CO2 incubators with reduced oxygen. Culturing cells at lower oxygen concentration will better simulate physiological conditions, resulting in cell behaviors that are more predictive of the *in vivo environment.*

Our variable oxygen control (or "tri-gas") incubators can generate conditions to help your cells grow faster and healthier. With the Heracell VIOS CO2 incubator, you can select the incubator for your O2 range: simulate hypoxic (1–21%) environments for primary cell, stem cell and embryo research applications, or hyperoxic (5–90%) conditions for research in lung, retina and other sensitive tissues.

Oxygen Control Range

Two available oxygen control ranges

(1) Option to simulate physiological hypoxic environments for stem cells and IVF applications.

(2) Option to increase oxygen concentration for the ability to operate at hyperoxic levels.

Air circulation for rapid recovery

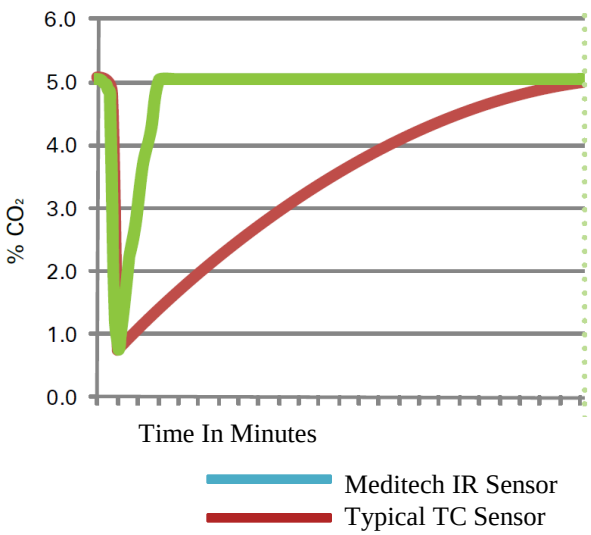
Meditech CO2 incubators are equipped with large air circulators for outstanding uniform distribution of critical environmental conditions like heat, gas and humidity.

Effective air distribution minimizes variation between cultures no matter where your cultures are located while preventing desiccation.

RH control and measuring

Meditech provides exterior reservoir for humidification to remove potential source of contamination. Reservoirs are available to replenish water without disturbing cultural activities.

CO2 Measuring Technology - Infrared sensor
a time-tested technology to provide precise co2 control



•Meditech CO2 incubators utilize a single beam, dual-wavelength IR CO2 sensor to get the most accurate measurement of CO2 in the incubator. It is the leading, proven technology in the field of CO2 measurements.

•Most competitive models utilize a Thermal Conductivity (T/C) sensor, which is affected by temperature, humidity and oxygen levels. Our IR sensor only reads CO2, offering unmatched precision control and stability over wide temperature and relative humidity ranges.

•O2 incubators introduce nitrogen into the incubator atmosphere, creating yet another variable complicating the T/C sensor's ability to accurately read CO2 levels. Hypoxic conditions in T/C equipped incubators further delay CO2 recovery. O2 levels have no affect on Meditech's IR sensor's ability to accurately read CO2.

•Adjusting CO2, temperature or humidity set points does not require any type of re-calibration of the IR sensor, unlike T/C sensors, which need re-calibrated any time a setting is changed

Complete contamination control - cont

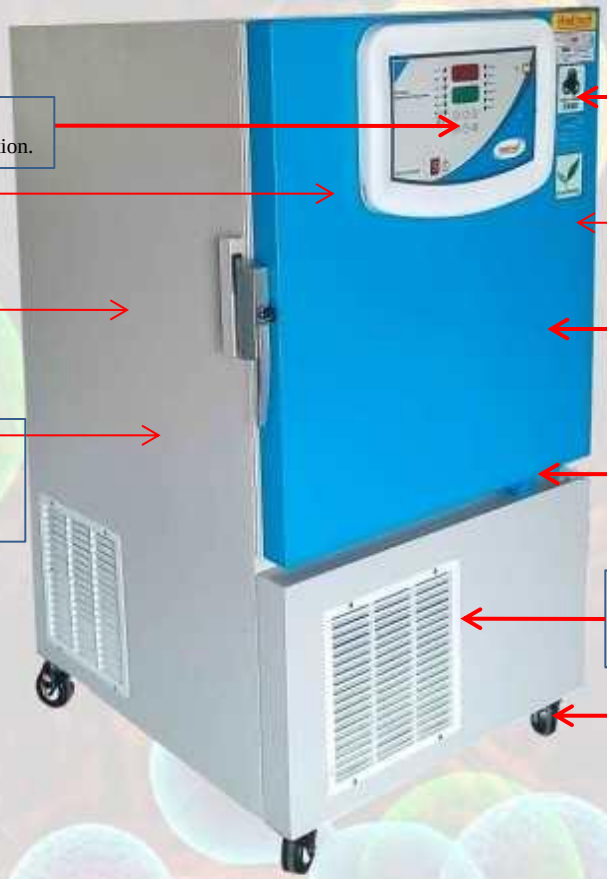
The main advantage of using meditech co2 incubator is ability to maintain cells. There is no comparison with the level of comfort level that can be achieved using copper tank co2 incubators. Meditech has14 years experience working with all types of mammalian cell lines, including adherent, suspension, hybridomas and transformed stem cells.

Advantages of Solid copper tank

1. Meditech CO2 incubators are wide choice for cell culture professionals with 100% pure copper interior.
2. 100% solid copper is easy to maintain.
3. Copper surfaces are safe for cultured cells and provide long service life.
4. Copper makes a smart choice for Reliability, Durability and recyclability.

Know your CO2 Incubator

Meditech®



The display is positioned at eye-level to make it easier to read and simplify operation.

Digital 7 inch PLC Touch Screen Controller

Best in Class 100mm insulation for effective temperature Holdover

Glass & Solid door, Automatic closing of the front door below opening angle of 90º and opening angle limited to 110º.Insulation and gasket is of silicone

CFC free refrigerant gas/green gas CFC free insulation

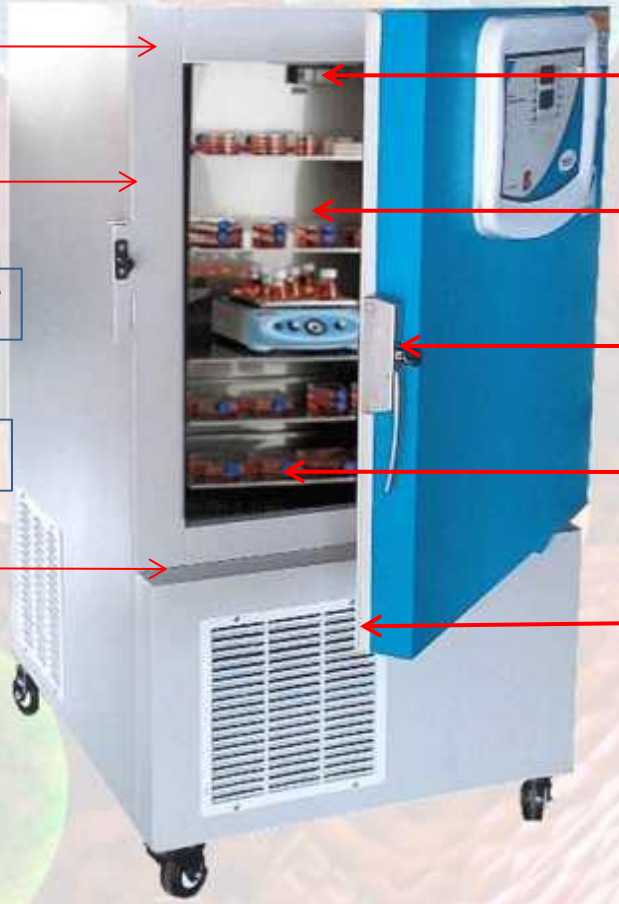
External Corrosion Resistant, powder coated (CR at least 1mm thickness)

Body

Door Heater avoids moisture condensation in humid atmospheric conditions. Magnetic door gaskets

Efficient compressor faster pull down & Recovery Time. Compressor Starting Voltage: 22% below nominal voltage.

Swivel Locking Castor Wheels



Separate Inner acrylic door with magnetic latch ensures minimal loss of cooling

Hotline to prevent frost accumulation

An inbuilt line voltage corrector of appropriate rating will form part of standard configuration.

Flicker free LED lamp for uniform lighting and better

Door opening audio and visual display alarm.

Circulators for uniform Temperature, Humidity and CO2 and O2

Internal Stainless steel or Pure Copper

Smart handle with Lock and Key

Mesh type sliding stainless steel tray allows bags to be placed upright with sufficient airspace to reduce "Sardine effect"

Unique design of Thermal barrier for better energy efficiency

Equipment meets electrical safety specification such as that of IEC (Class I)
Standard Remote alarm contacts and available data outputs allow connection to an in-house power source
Two Thru wall access ports (one on right and left side walls) offer easy addition of probes, sensors and power cords

ISO 9001, ISO1400, ISO13485, CE and WHO-GMP certified.

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Meditech CO2 Incubators are designed to protect and advance your life's research and work. The carefully engineered components are designed to maintain high relative humidity and precisely controlled temperature and CO2. This environment will not only keep cultures secure, but create conditions so your samples flourish. This incubator is designed with your convenience in mind by including many features to make operating the incubator a pleasurable experience.

Advanced technology and a secure environment.

Meditech provides exceptional conditions for the most reliable results in cell and tissue culture studies. Precision-engineered direct heat and IR sensor technology provides stable temperature and exact CO2 control.

Compact, sleek design.

Takes up minimal space and is stackable so you can optimize your laboratory space. Each incubator comes with its own stacking kit for your setup convenience.

Rapid overnight decontamination cycle.

Decontamination has never been so simple than with the push of a button. Meditech rapid, overnight 90˚C moist heat decontamination cycle is maintenance-free.

FEATURES AND BENEFITS

•The Meditech compact and stackable, allowing you to attain the best use of the incubator's interior and your laboratory space.
•The Meditech incubator is available to support hypoxic applications.
• Meditech Incubator comes with a drift resistant, highly-reliable Infrared (IR) Sensor, allowing for quick recovery after the door is opened.
•The interior is comprised of polished stainless steel with coved corners, which is highly resistant to corrosion and allows for an easy and effective cabinet wipe-down when needed.
•The adjustable shelves are readily configured to meet your application's need and slide out, making samples at the back of the chamber easy to access.
•Our "tool-less" interior design allows you to remove the interior components for routine cleaning or to setup multiple types of cell research.
•The rapid Decontamination Cycle cleans the incubator overnight with the push of a button, minimizing downtime.
•Multiple HEPA filter design continuously
• Protects the incubator from contamination.
•The Meditech-O has a tri-zone method for temperature control, utilizing individual heaters, which are located on the outside of every interior wall, to ensure highly uniform temperature that blankets the inside of the incubator. Temperature is rapidly recovered after each door opening.
•Meditech carefully designed airflow system maximizes airflow and results in rapid temperature and humidity recovery with optimal uniformity.
•Our ergonomic, intuitive user interface has a built in message center. It allows for effortless setup, at-a-glance monitoring from across the room and simple adjustments to set points and calibrations.
•Advanced data logging system records time stamped incubator parameters for on screen viewing. Built-in help feature allows easy access to frequently asked questions.
•Self diagnostic alarm system monitors all functions and controlled parameters and prompts the user in the event that any parameter exceeds programmable limits.
•A wide range of popular accessories are available which allow you to customize your unit for your application.

Ergonomic, intuitive user interface.

Incubator setup is simple and the large alpha/numeric display allows for at-a-glance monitoring.

O2 Model. Suppressed oxygen control is crucial

In many applications, such as the research of acute and chronic diseases. These demanding hypoxic studies are made possible with our O2 incubator. The O2 incubators feature a strategically placed spacer, recovering humidity after door openings at a much faster rate and allowing cultures to cultivate at optimum environmental conditions.

PLC Based Controller

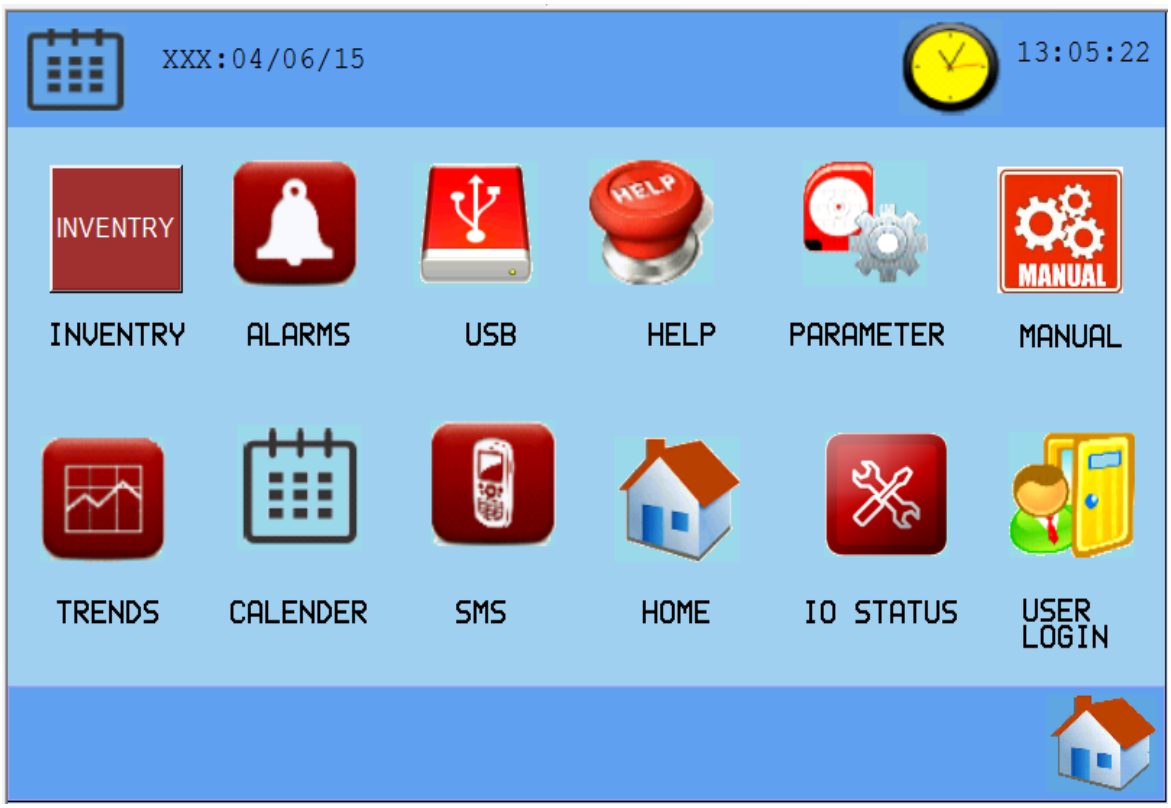
LED INDICATION
1. Line In
2. Power
3. Comp On
4. Heater On
5. Battery On
6. Battery Low
7. Temp High
8. Temp Low
9. Power Fail
10. Sensor Fail
11. Chart Change
12. System On

Scrolling LIVE Data logger on LED screen
1. Temperature
2. Incoming Voltage
3. Ambient Temperature
4. Time in hours of revolution chart
5. Current Date
6. Current Time
7. Battery Voltage

User Friendly Settings
1. Date
2. Time
3. High Temp Alarm
4. Low Temp Alarm
5. Hysteresis
6. Compressor Delay

DISPLAY INDICATIONS
1. Temperature
2. CO2
3. Humidity
4 O2 (Optional)

Parameters	Meditech IR Sensor	TC Sensor
Accuracy	The sensor is not affected by temperature or humidity; it solely reads CO2 levels.	Temperature and humidity influence the CO2 reading; measures the thermal conductivity of air, not CO2 alone.
Recovery	CO2 recovers in less than five minutes after a 30 second door opening.	CO2 cannot recover until both temperature and humidity stabilize; the average CO2 recovery is 30 minutes.
Reliability	Gives precise readings of CO2 levels at all times because the sensor is only measuring CO2.	The CO2 display gives false readings until temperature, humidity and CO2 are stable.
Convenience	You can change CO2, temperature and humidity settings without having to re-calibrate the IR Sensor.	Sensor calibration is required each time you change any of the settings; weekly calibration is typical with these sensors.


XXX:04/06/15
13:05:22
INVENTRY
INVENTRY
ALARMS
USB
HELP
HELP
PARAMETER
MANUAL
MANUAL
TRENDS
CALENDER
SMS
HOME
IO STATUS
USER LOGIN

FEATURES AND FUNCTIONS

A REVOLUTIONARY MONITORING & ALARM SYSTEM

Say No To Manual Recording
-Error Free
-Separate signatures for data reviews & data approval
-No mistake in record maintaining
-Data analysis
-Tabular and graphical data representation

Secure audit trails
-Audit protection
-Provide certified proof of process control

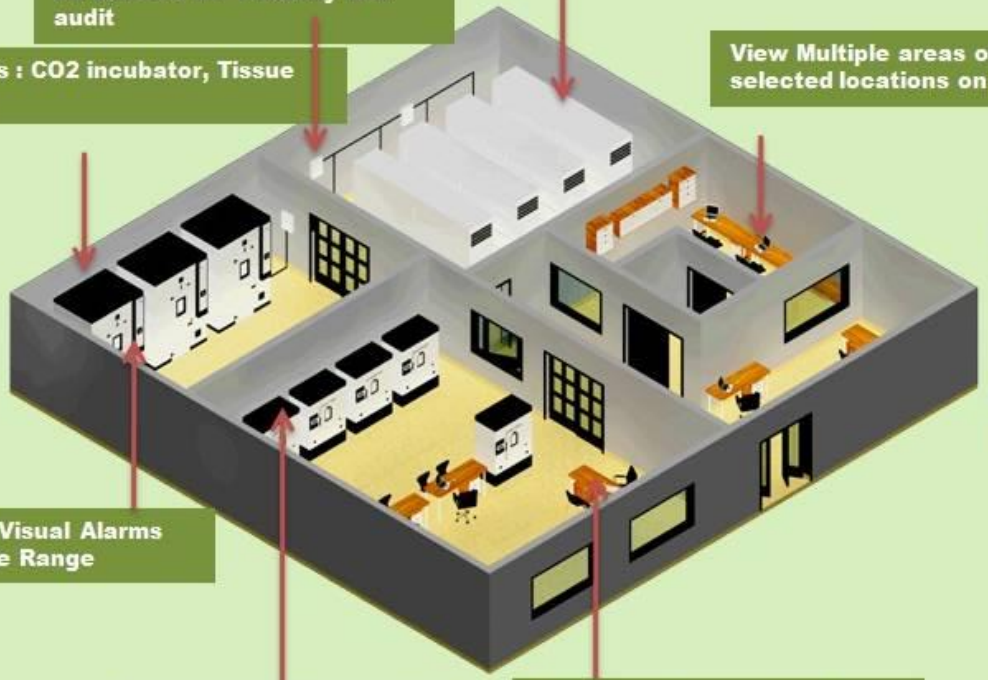
Wireless Display with Light, Humidity, Temperature ,CO2, O2 Sensors for Visibility and audit

Rooms: Co2 culture Rooms, Tissue Culture

Chambers : CO2 incubator, Tissue Culture

View Multiple areas or selected locations on PC

View Data from Any part of the World
-Browser base application software
-view from PC, smart phones and tablets



Traceability
-Instant response to data request
-Continues Data saving
-Data Protection and backups

Audio and Visual Alarms for Settable Range

Receive SMS and Email alarm notification

Research Chambers and Rooms

Data recorders are easy to relocate and swap for service and calibration

Alarms
Alarms for parameter deviation
SMS Alerts
Alarm log with acknowledgement and user comments
Email alerts for supervisor

Supervisor Function
Alerts users for pending activity
Escalates unattended issues to higher authority

WATER JACKETED INCUBATORS		
Specifications and Ordering	**MTJC 525307**	**MTJC 525308**
Dimensions		
Chamber capacity	188 L (6.64 cu. ft.)	376 L (13.28 cu. ft.)
Internal Chamber dimensions (w x h x d)	546 x 647 x 535 mm (21.5 x 25.5 x 21 in.)	546 x 1300 x 535 mm (21.5 x 51.2 x 21 in.)
External dimensions (w x h x d)	648 x 1029 x 686 mm (25.5 x 40.5 x 27 in.)	648 x 1867 x 686 mm (25.5 x 73.5 x 27 in.)
Construction of inner chamber		
SS	100% Stainless Steel Coved Interior Chamber	
CP	99.99% Copper Coved Interior Chamber	
Controller and Display	7 inch Touch Screen PLC based LED Controller	
Weight		
Dry:	99 kg / 218 lbs	224 kg / 492 lbs.
Full H20 Jacket:	175 kg / 385 lbs	375 kg / 826 lbs.
Shipping:	130 kg / 287 lbs.	255 kg / 561 lbs.
Water Jacket Capacity	20 gal. / 75.7 L	20 gal. / 75.7 L
Shelves - Removable		
Construction	Stainless steel, perforated	
Number of shelves provided and maximum	4 and 17	6 and 24
Decontamination Cycle		
Humidified Cycle -95°C	14 Hours to run	14 Hours to run
Dry Cycle Features-145°C	10 Hours to run	10 Hours to run
Temperature		
Sensor accuracy	(+/-) 0.1° C	
Range	5° C above ambient to 50° C	
Readability and setability	0.1° C	
Uniformity	(+/-) 0.1° C	
Humidity		
RH range	>98% @ 37° C	
RH source	3 L (3.2 qt) standard pan	
CO2		
CO2 range	0-20%	
Control (readability and setability)	0.10%	
CO2 sensor type	TC / IR (optional)	
Gas inlet pressure required	15 PSIG (1.0 bar)	
O2		
O2 control accuracy	(+/-)0.1%	
O2 range	1-20%	
Readability and setability	0.10%	
O2 sensor type	Fuel cell	
Gas inlet pressure required	15 PSIG (1.0 bar)	
Electrical (code for Ordering)		
D	115 VAC / 60 Hz	
E	100 VAC / 50-60 Hz	
F	230 VAC / 50-60 Hz	
G	220 VAC / 50-60 Hz	
Remote Alarm contacts	yes	
Data output and Communications Interface	USB, Ethernt (LAN) and RS-485	
CO2 Port	yes	
Water Level Sensor	yes	
Adjustable Leg Levellers	yes	
Access Port	yes	
Fill Port and Drain Valve	yes	
Full Size Water Pan	yes	
Electrical Cord	8 ft. / 2.5 m	
Automatic CO2 Tank Switch	yes	

Air Jacketed C02 Incubator

Model	MTBBR1	MTBBR2	MTBBR3	MTBBR4	MTBBR5	MTBBR6	MTBBR7
Type	Vertical						
Effective storage volume **liters**	**90**	**160**	**200**	**340**	**560**	**710**	**850**
Effective storage volume **cu feet**	**3.2 Cu Feet**	**5.6 Cu Feet**	**7 Cu Feet**	**12 Cu Feet**	**20 Cu Feet**	**25 Cu Feet**	**30 Cu Feet**
Trays (removable type) Stainless Steel slide out trays	4 stainless steel slide out trays	5 stainless steel slide out trays	5 stainless steel slide out trays	5 stainless steel slide out trays	5 stainless steel slide out trays	6 stainless steel slide out trays	6 stainless steel slide out trays
Temperature Range	**5°C above ambient to 60°C** and **-5°C to +60°C**						
Temperature Control	±0.1°C at 37°C						
Temperature Uniformity	±0.3°C at 37°C						
Temperature Sensor	Precision Thermistor						
Humidity Range	Elevated up to 95% @ 37°C						
CO2 Range	0-20% CO2						
CO2 Control	±0.1% CO2						
CO2 Sensor	Infrared CO2 Sensor						
O2 Range (Optional)	1-21% O2						
O2 Control	±0.1% O2						
O2 Sensor	Fuel Cell						
Miniature Circuit Breaker (MCB)	240V / 10 A						
Cabinet material	18 swg CR Sheet - powder coated						
Inner chamber	22 SWG Stainless Steel Sheet						
Input voltage	110 / 230 V single phase AC						
Stabilizer	1KVA Built in stabilizer						
Chamber temperature range	-5ºC to +60ºC						
Air circulation inside the chamber	Continuously operated forced air circulation using the evaporator fan						
Slide out rail	Heavy duty telescopic rail						
Lamp	CF Lamp 14W / LED Lamp						
Compressor	Hermetically sealed compressor						
Refrigerant	R134a						
Wheels	Caster wheels						
Temperature sensing method	Encapsulated digital sensor dipped in 0.25% glycerine solution kept in a plastic bottle						
Temperature controller	Temperature Recorder and Control Unit (TRCU)						
Accuracy of temperature sensor	(+/- 0.5ºC)						
Display	4x7 segment LED (red) and 4x7 segment LED (green)						