



Cell culture

## Secure cell culture protection

Forma Series 8000 Water Jacket and Direct Heat  
CO<sub>2</sub> Incubators

# Exceptional selection, stability and protection

CO<sub>2</sub> incubators are essential for cell culture, and reliable versatility is a must.

With over 100,000 CO<sub>2</sub> incubators from Thermo Fisher Scientific in use worldwide, we have established our global leadership in cell culture incubation technologies.

## Thermo Scientific – a trusted brand

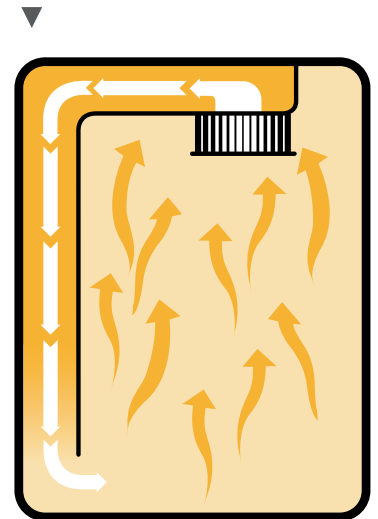
With the Thermo Scientific™ Forma™ Series 8000 CO<sub>2</sub> Incubators, you have the ultimate choice of both water jacket (WJ) and direct heat (DH) technology, giving you the flexibility you can depend on for growing cells.

Built to high standards of workmanship and backed by excellent service and technical support, our Forma Series 8000 CO<sub>2</sub> incubators are designed to provide quality culturing with peace of mind.

In every Thermo Scientific Series 8000 incubator, a HEPA filter inside the chamber filters out airborne particles and microorganisms that could pose a risk to fragile cultures. The HEPA filter is positioned inside the incubator chamber to clean the air surrounding your cells. This also provides easy access and simple replacement (no tools needed). An adjustable built-in timer notifies you when to replace the filter.



▲ Stainless steel shelves and supports can be removed without tools for easy cleaning or adjustment.



# Complete contamination control

With the proven contamination prevention technologies of the Forma Series 8000 CO<sub>2</sub> incubators, you can save time and money, while keeping your cultures safe.

## Rapid response ISO Class 5 cleanroom air quality

Culture yields and quality can be affected by airborne microorganisms.

Micro-environment inside chamber ensures ISO Class 5 quality.

ISO Class 5 / Class 100 air quality reduces particulates, minimizing the risk of lost time spent thawing and regrowing cells, and repeating experiments.

The HEPA filter airflow system:

- ensures ISO Class 5 / Class 100 air quality is achieved within five minutes of door closure\*
- continuously filters chamber volume every 60 seconds
- filters out airborne biological particulates, a common cause of cell culture contamination

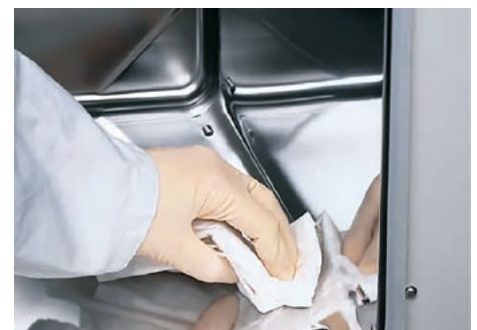
## Time saving easy cleaning

Every aspect of Thermo Scientific Forma Series 8000 CO<sub>2</sub> incubators is designed to be easy to clean.

- polished stainless steel interior with 100% covered corners saves cleaning time and reduces contamination risk
- an adjustable timer, signals when the easy-to-access HEPA filter needs replacement
- disposable snap-fit blower/scroll mounting, stainless steel shelves and supports, and HEPA filters can all be removed easily without tools

\* ISO Class 5 / Class 100 for internal chamber with door closed only and not for room the equipment is installed in.

Clear and precise: the intuitive user interface provides easy to use controls for all settings, as well as feedback on all vital information via the message center and alarm array.



Polished stainless steel interior with 100% covered corners is easy to clean, saving time and reducing contamination risk.

# Simply more security

## Maximum thermal protection

With a triple wall construction and large volume of water, Thermo Scientific Forma Series 8000 Water Jacketed (WJ) CO<sub>2</sub> incubators provide unsurpassed temperature stability and protection against heat loss.

The water jacket technology holds the temperature for extended periods of time, which is critical during power failures. Under test conditions, the temperature dropped initially at only 1 °C per hour and just 7.6 °C in 10 hours.

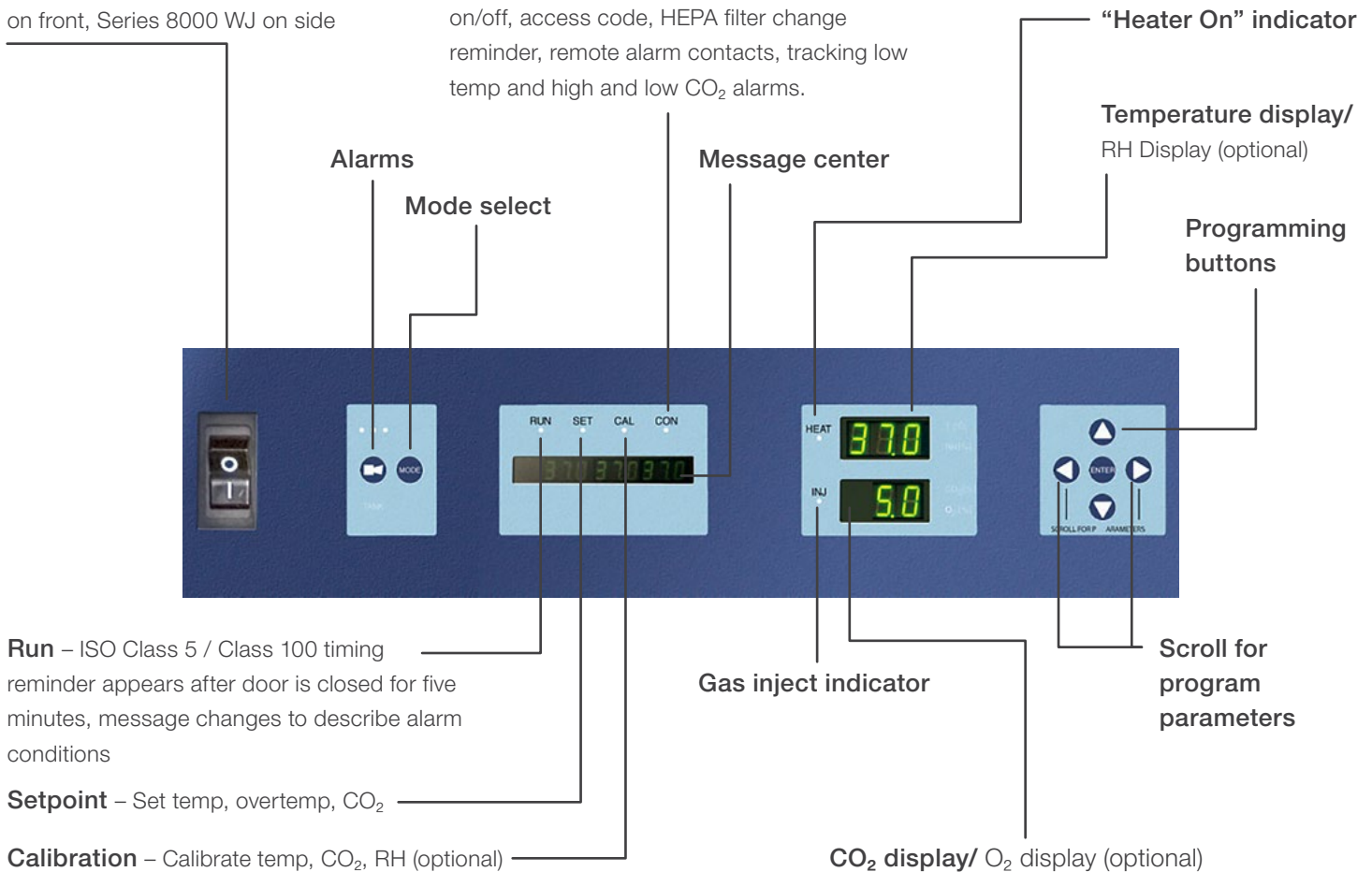
Forma Series 8000 WJ CO<sub>2</sub> incubators also provide fast temperature recovery. The patented, heated, dual pane glass inner door is more responsive than standard doors and minimizes condensation.

## Easy set up

The incubator message center controls are powerful and intuitive. The remote alarm contacts and an optional digital RH display enable continual monitoring for humidity dependent applications.

**Main switch** – Series 8000 DH on front, Series 8000 WJ on side

**System configuration** – Configure audible on/off, access code, HEPA filter change reminder, remote alarm contacts, tracking low temp and high and low CO<sub>2</sub> alarms.



# Culture with confidence

## On-demand sterilization

Forma Series 8000 Direct Heat (DH) CO<sub>2</sub> incubators include an easy-to-use, safe and proven sterilization system to destroy all forms of microbial life inside the chamber. The automatic high temperature sterilization cycle is ideal for overnight operation and enables consistent sterilization time after time. Audible alarms and access codes enable laboratory and culture safety as well as security.

## The mobile answer

Forma Series 8000 DH CO<sub>2</sub> incubators are lightweight. With the roller base accessory, these advanced incubators can be moved quickly to where needed within your laboratory.

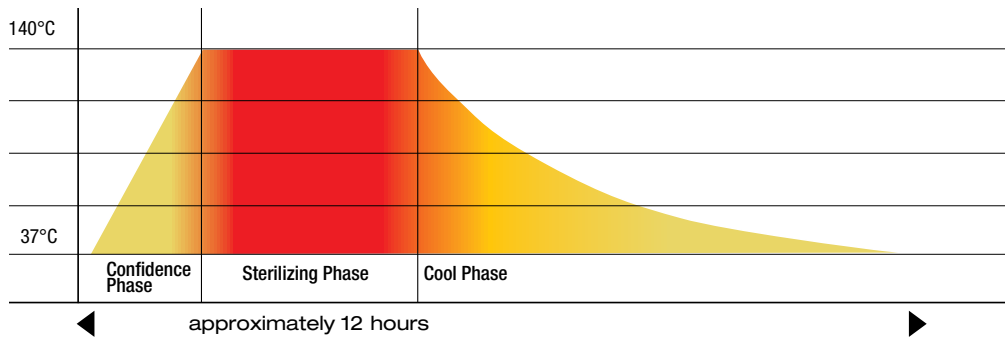
## Easy to configure and use

Forma Series 8000 CO<sub>2</sub> incubators use a microprocessor controlled monitoring system Message Center. The message center is highly intuitive and extremely user friendly. For example, the sterilization

cycle is started by the simple press of one button. Options available include a digital RH display, to enable continual monitoring for humidity dependent applications.

## High temperature uniformity

Directed airflow and direct chamber heating maintain optimum uniformity for an ideal culturing environment. During the sterilization cycle, the same system helps ensure that your incubator's entire chamber is sterilized – all microbial contamination is eliminated.

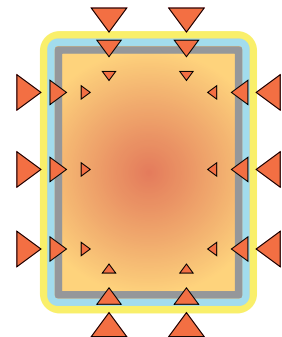


Direct heat sterilization cycle – 120 minutes at 140 °C – ensures the elimination of all microorganisms and fungal spores from every incubator surface (ANSI/AAMI/ISO 11134). This claim has been validated with suspensions from *B. subtilis* spores calibrated for dry heat processes, because these are most resistant against dry heat sterilization and therefore the recommended indicator organism (U.S. Pharmacopoeia, ch. 1035). All spores applied to the different surfaces of the incubator – chamber wall (stainless steel), door (glass) and door gasket (tempered silicone), have been reliably eliminated with the sterilization cycle after 120 minutes at 140 °C.



The sterilization cycle starts with the simple press of the white button! During the heat sterilization process, the message center guides you through the cycle with start-up and cycle status messages.

Stable and uniform temperature distribution through heating of all six sides of the chamber, during incubation as well as during sterilization.



# Accessories for both models

## Series 8000 Water Jacket CO<sub>2</sub> Incubators

Description	Cat. No
Stainless steel shelf and channels	190884
Replacement HEPA filter <b>(Fig. 02)</b>	760175
HEPA value pack (four filters)	760209
10 disposable in-line filters	760210
HEPA filter replacement kit (inline and access port filters)	1900067
Independent inner glass door kit	190650
Door lock for inner glass door	190646
CO <sub>2</sub> gas regulator <b>(Fig. 04)</b>	965010
N <sub>2</sub> gas regulator	962027
External automatic gas tank interchange <b>(Fig. 03)</b>	3050
Roller base <b>(Fig. 01)</b>	190647
Floor stand	190648
Right hand door swing, factory installed at time of order	190666
Humidity (RH) display, factory installed at time of order	190643

## Series 8000 Direct Heat CO<sub>2</sub> Incubators

Description	Cat. No
Stainless steel shelf and channels	190884
Replacement HEPA filter <b>(Fig. 02)</b>	760175
HEPA value pack (four filters)	760209
10 Disposable In-Line Filters	760210
HEPA filter replacement kit (inline and access port filters)	1900067
Independent inner glass door kit	190650
CO <sub>2</sub> gas regulator <b>(Fig. 04)</b>	965010
External automatic gas tank interchange <b>(Fig. 03)</b>	3050
Roller base <b>(Fig. 01)</b>	1900063
Right hand door swing, factory installed at time of order	190666
Humidity (RH) display, factory installed at time of order	1900091

\* Accessories are customer installed unless indicated otherwise. In addition to providing a standard line of equipment and accessories, we will manufacture custom accessories to meet your specific requirements. Contact us for details.

### Fig. 01 | Roller base

Heavy-duty, dual-castor base with swivellocks and leveling feet, raising unit by 3.0" (7.6 cm). Supports up to two stacked units.



### Fig. 02 | HEPA air-filter

The High Efficiency Particulate Air-Filter (HEPA) removes more than 99.97% of all particles. Consequently, 'Class 100' (ISO Class 5) air quality (<100 particles per cubic foot of air) is achieved within 5 minutes of door closure.



### Fig. 03 | External automatic gas tank interchange

Monitors CO<sub>2</sub> and automatically switches from one cylinder to the other when the supply is exhausted.



### Fig. 04 | Two-stage CO<sub>2</sub> gas regulator

Regulators with barbed connection and shut off valve.





thermo  
scientific

# Series 8000 WJ CO<sub>2</sub> Incubators

## Technical specifications for the water-jacketed model

Temperature	
Control	±0.1 °C
Range	5 °C above ambient to 55 °C (131 F)*
Uniformity	±0.2 °C @ 37 °C (98.6 F)
Tracking alarm	User-programmable high/low
Overtemperature	
Sensor	Precision thermistor
Controller	Independent analog electronic
Setability	0.1 °C
CO <sub>2</sub> /O <sub>2</sub>	
CO <sub>2</sub> /O <sub>2</sub> Control	Better than ±0.1%
CO <sub>2</sub> Range	0-20%
O <sub>2</sub> Range	1-20%
Inlet Pressure	15 PSIG (1.0 bar)
CO <sub>2</sub> sensor	T/C or IR
O <sub>2</sub> Sensor	Fuel cell
Readability & setability	0.1%
Tracking alarm	User-programmable high/low
Humidity	
RH	Ambient to 95% @ 37 °C (98.6 F)
Humidity pan	3.2 qt. (3.0 liters) standard
Display (opt.)	In 1% increments
Fittings	
Fill port	3/8" hose (barbed)
Drain port	1/4" hose (barbed)
Access port with filter	1.3" (3.3 cm) with removable silicone plug
CO <sub>2</sub> inlet	1/4" hose (barbed)
Unit Heat Load	
115 V / 230 V	344 BTUH (100 watt)
Shelves (Continued)	
Dimensions	18.5" x 18.5" (47.0 cm x 47.0 cm)
Construction	Stainless steel, perforated
Surface area	2.4 sq. ft. (0.2 sq. m)
Max. per chamber	40.8 sq. ft. (3.8 sq. m)
Standard, maximum	3, 16

Construction	
Water jacket volume	11.7 gal. (43.5 liters)
Interior volume	6.5 cu. ft. (184.1 liters)
Interior	Type 304, mirror finish, stainless steel
Exterior	18 gauge, cold-rolled steel, powder coated
Outer door gasket	Four-sided, molded, magnetic vinyl
Inner door gasket	Removable, cleanable, feather-edged, silicone
Electrical	
All	115 V, 50/60 Hz, 3.6 A
	230 V, 50/60 Hz, 2.0 A
Circuit breaker/power switch	6 Amps/2 Pole
Convenience	75 watts max. (one per receptacle chamber)
Plug	115 V: NEMA 5-15P plug; 230 V: CEE 7/7 plug
Alarm contacts	Power interruption; deviation of temp, CO <sub>2</sub> , O <sub>2</sub> , RH; customer connections through jack on back of unit
Dimensions	
Exterior (w x h x f-b) inch/cm	26.0 x 39.5 x 25.0 / (66.0 x 100.3 x 63.5)
Interior (w x h x f-b) inch/cm	21.3 x 26.8 x 20.0 / (54.1 x 68.1 x 50.8)
Weight	
Net	260 lbs. (117.9 kg)
Net operational	365 lbs. (165.6 kg)
Shipping (motor)	324 lbs. (147.0 kg)



# Series 8000 WJ CO<sub>2</sub> Incubators

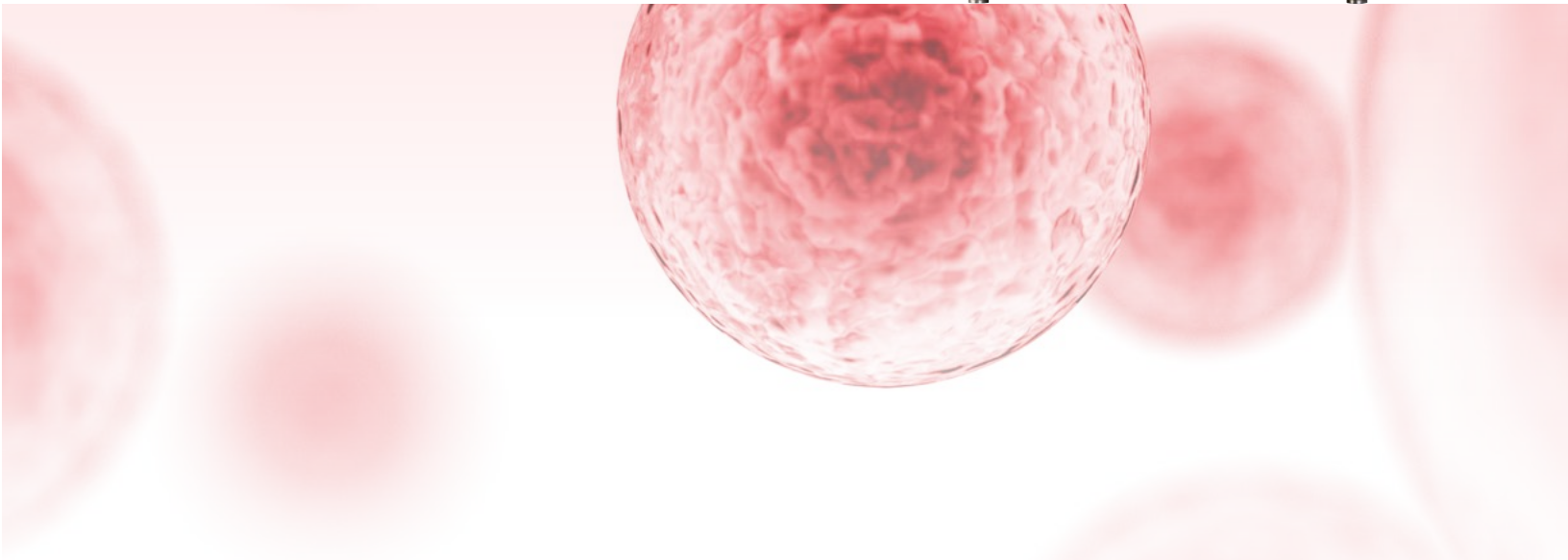
## Ordering information for the water-jacketed model

CO <sub>2</sub>	O <sub>2</sub>	Voltage	Cat No.
TC	–	115 VAC	3428
IR	–	115 VAC	3422
TC	yes	115 VAC	3424
IR	yes	115 VAC	3426
TC	–	230 VAC	3429
IR	–	230 VAC	3423
TC	yes	230 VAC	3425
IR	yes	230 VAC	3427

### Choice of T/C or IR sensor

Select a T/C sensor when chamber temp and RH are relatively constant. Typically, a T/C sensor has a longer life than an IR sensor.

Select an IR sensor when temp and RH levels are changed frequently. With either sensor, elevated RH is critical to prevent desiccation.



# Series 8000 DH CO<sub>2</sub> Incubators

## Technical specifications for the direct heat model

Temperature	
Control	±0.1 °C
Range	5 °C above ambient to 50 °C (122 F)
Uniformity	±0.3 °C @ 37 °C (98.6 F)
Tracking alarm	User-programmable high/low
Overtemperature	
Sensor	Precision thermistor
Setability	0.1 °C
Function	Shuts off heat
Temperature safety	
Sensor	Precision thermistor
Controller	Independent analog electronic
CO <sub>2</sub>	
CO <sub>2</sub> control	Better than ±0.1%
CO <sub>2</sub> range	0-20%
Inlet pressure	15 PSIG (1.0 bar)
Sensor	T/C or IR
Readability & setability	0.1%
Tracking alarm	User-programmable high/low
Humidity	
RH	Ambient to 95% @ 37 °C (98.6 F)
Humidity pan	3.2 qt. (3.0 liters) standard
Display (opt.)	In 1% increments
Fittings	
Access port	1.3" (3.3 cm) with removable silicone plug with filter
CO <sub>2</sub> inlet	1/4" hose (barbed)
Unit heat load	
115 V / 230 V	293 BTUH (86 Watt)
Shelves	
Dimensions	18.5" x 18.5" (47.0 cm x 47.0 cm)
Construction	Stainless steel, perforated
Surface area	2.4 sq. ft. (0.2 sq. m)
Max. per chamber	36.0 sq. ft. (3.3 sq. m)
Standard, maximum	3,16

Construction	
Interior volume	6.5 cu. ft. (184.1 liters)
Interior	Type 304, mirror finish, stainless steel
Exterior	18 gauge, cold-rolled steel, powder coated
Outer door gasket	Four-sided, molded, magnetic vinyl
Inner door gasket	Removable, cleanable, feather-edged, silicone
Electrical	
All	115 V, 50/60 Hz, 9.6 A 230 V, 50/60 Hz, 4.4 A
Circuit breaker/power switch	12 amps/2 pole
Convenience/receptade	75 watts max. (matches cabinet voltage)
Plug	115 V: NEMA 5-15P plug; 230 V: CEE 7/7 plug
Alarm contacts	Power interruption; deviation of temp, CO <sub>2</sub> , RH; customer connections through jack on back of unit
Dimensions	
Exterior (w x h x d)	26.3" x 39.5" x 25.0" (66.8 cm x 100.3 cm x 63.5 cm)
Interior (w x h x d)	21.3" x 26.8" x 20.0" (54.1 cm x 68.1 cm x 50.8 cm)
Weight	
Net	260 lbs. (117.9 kg)
Shipping (motor)	315 lbs. (142.9 kg)

# Series 8000 DH CO<sub>2</sub> Incubators

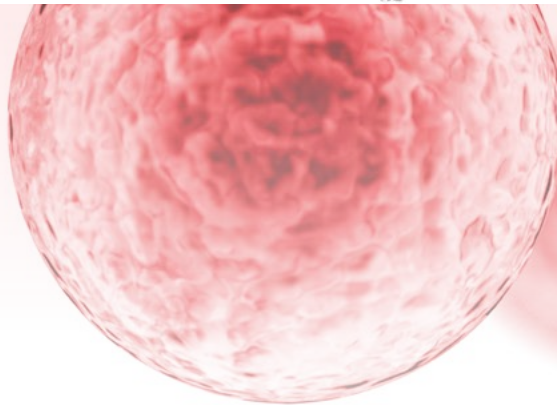
## Ordering information for the direct heat model

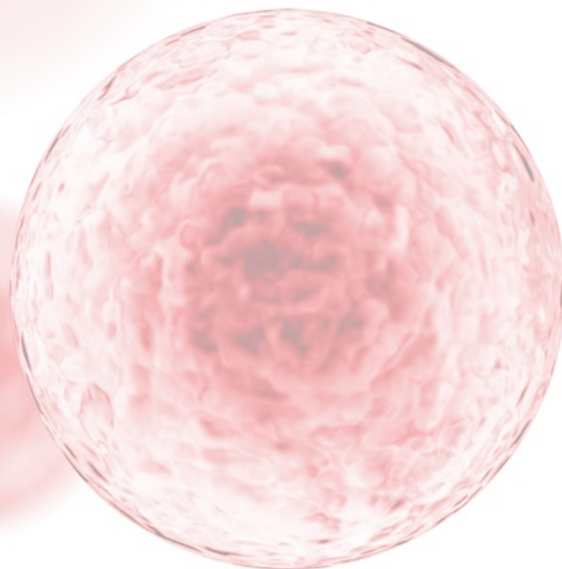
CO <sub>2</sub>	Voltage	Cat No.
TC	115 VAC	3540
TC	230 VAC	3541
IR	230 VAC	3543

### Choice of T/C or IR sensor

Select a T/C sensor when chamber temp and RH are relatively constant. Typically, a T/C sensor has a longer life than an IR sensor.

Select an IR sensor when temp and RH levels are changed frequently. With either sensor, elevated RH is critical to prevent desiccation.





Learn more at [thermofisher.com/co2](https://thermofisher.com/co2)

**For Laboratory Use. It is the customer's responsibility to ensure that the performance of the product is suitable for customers' specific uses or applications.** © 2023 Thermo Fisher Scientific Inc. All rights reserved. All trademarks are the property of Thermo Fisher Scientific and its subsidiaries unless otherwise specified. **EXT5595 0923**