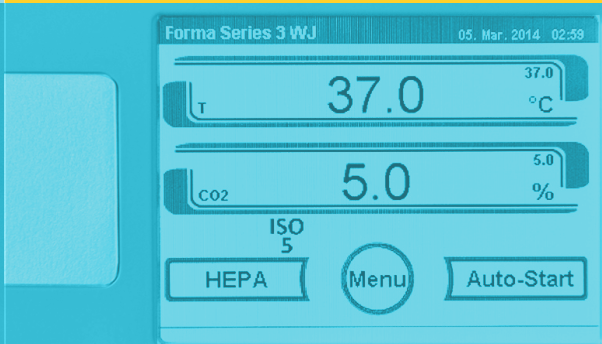




Thermo Scientific Forma Series 3
Water Jacketed CO₂ Incubator



Reliable water jacket technology
with effortless touchscreen control



reliability



purity



simplicity

Bringing smart simplicity to proven reliability.



The first choice of researchers around the world, the Thermo Scientific™ Forma™ Series 3 Water Jacketed CO₂ Incubator is now even better — thanks to the easy-to-use Thermo Scientific™ iCAN™ touchscreen. Reliable temperature stability and HEPA clean room air purity are paired with the simplest way to control and monitor your incubator, ensuring protection for your important cell cultures. A combination that's truly hard to beat.

- ◀ Easily stackable, large 6.5 cu ft capacity, polished stainless steel chamber with choice of CO₂ gas sensors and oxygen control.

U.S. Patents 5,792,427 and 6,117,687

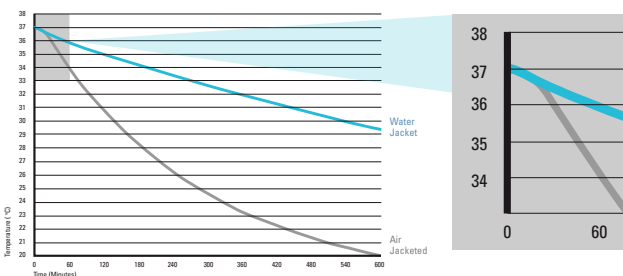


Reliability with proven water jacket technology.

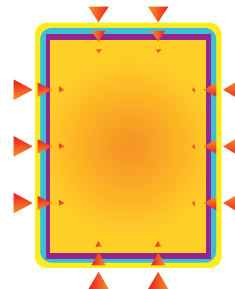
Durable triple-wall construction delivers optimal temperature uniformity. And it's guaranteed for life against leakage. Provides outstanding thermal stability for your valuable cell cultures to protect against ambient temperature swings and unexpected power outages that can ruin your cultures.

Protect your cultures from the unexpected.

Temperature loss from a power outage or extreme ambient swings can ruin your cultures. Product testing during a power failure in an 18° C (64.4° F) ambient environment showed the water jacketed incubator's temperature gradually dropping just 1° C, from 37° C to 36° C (98.6° F to 96.8° F), in 1 hour and 7.6° C in 10 hours.



Water jacketed incubator temperature versus air jacketed incubator temperature during a power failure in an 18° C ambient environment.

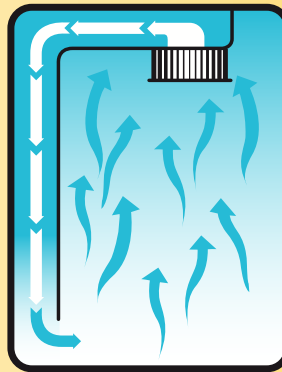
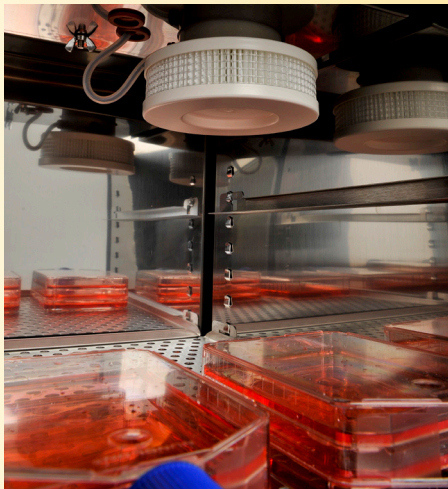


Water Jacket
Unique triple-wall construction provides outstanding temperature stability supplied by dual layers of water and high-quality insulation.

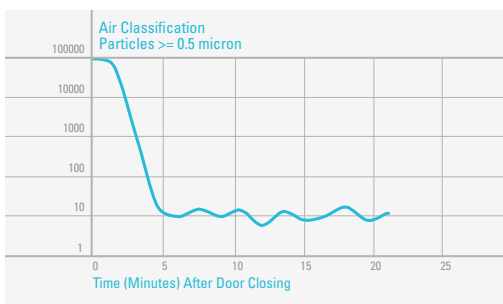


Purity from in-chamber HEPA air filtration.

Minimize the risk of airborne contaminants entering the incubator from multiple door openings with proven HEPA air filtration system. Maintain your valuable cultures in ISO Class 5 clean room air purity in under five minutes from door opening. HEPA-VOC filters are also available to remove volatile organic vapors often found in lab solvents and cleaning agents that risk the safety of sensitive cultures.



◀ Our patented HEPA Filter Airflow System continuously filters the entire chamber volume every minute for an aseptic atmosphere. Fan-assisted airflow prevents stratification and facilitates fast recovery of all conditions after door opening.



◀ Air Quality Defined

Federal Standard 209E and International Standard ISO 14644-1 define air quality classifications (e.g., Class 1, 10, 100 and ISO Class 1, 2).

The federal class number is the maximum allowable number of particles >0.5 microns per cubic foot of air. ISO Class 5 correlates most closely to Federal Standard Class 100.



Simplicity with the iCAN touchscreen interface.

Experience total data visibility and monitor all incubator interaction with the Forma Series 3 CO₂ Incubator. On-screen menu prompts, error and usage logs, data logging, performance trend graphing, and multiple language selection make it the smartest incubator interface available. Download your incubator performance, including error and data logs, with the installed USB port and provided software.



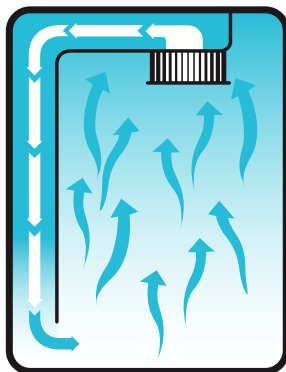
◀ Door-mounted touchscreen interface provides complete data visibility to monitor all incubator interaction.

◀ Automatically logs all incubator interactions to better monitor culturing conditions.

Optimized cell growth technologies.

Fan-assisted air circulation for rapid recovery.

For advanced uniformity and recovery, our airflow patterns are specifically designed for optimal distribution on critical environmental conditions such as temperature, gas exchange, and humidity. Efficient circulation minimizes variation between cultures, while preventing desiccation — no matter where your cultures are located in the incubator.



◀ Our patented HEPA Filter Airflow System continuously filters the entire chamber volume every minute for an aseptic atmosphere. Fan-assisted airflow prevents stratification and facilitates fast recovery of all conditions after door opening.



Convenient removable humidity pan

Relative humidity

Humidity is achieved with a convenient removable water pan. For applications requiring flexibility and precise monitoring of humidity levels, an optional RH sensor is available for monitoring humidity levels inside the chamber. It displays current conditions on the iCAN with an alarm to alert of low water, and assists in automatically compensating for the effect of RH on CO₂ with thermal conductivity sensors.

Choose your in-chamber CO₂ measuring technology.

All Forma Series 3 CO₂ incubators feature in-chamber CO₂ sensors positioned near your cultures — responding quickly to any deviations in desired conditions. Choose from two sensor technology options:

Proven reliable thermal conductivity (TC) sensors for accurate monitoring and long service life for your valuable cultures.

or

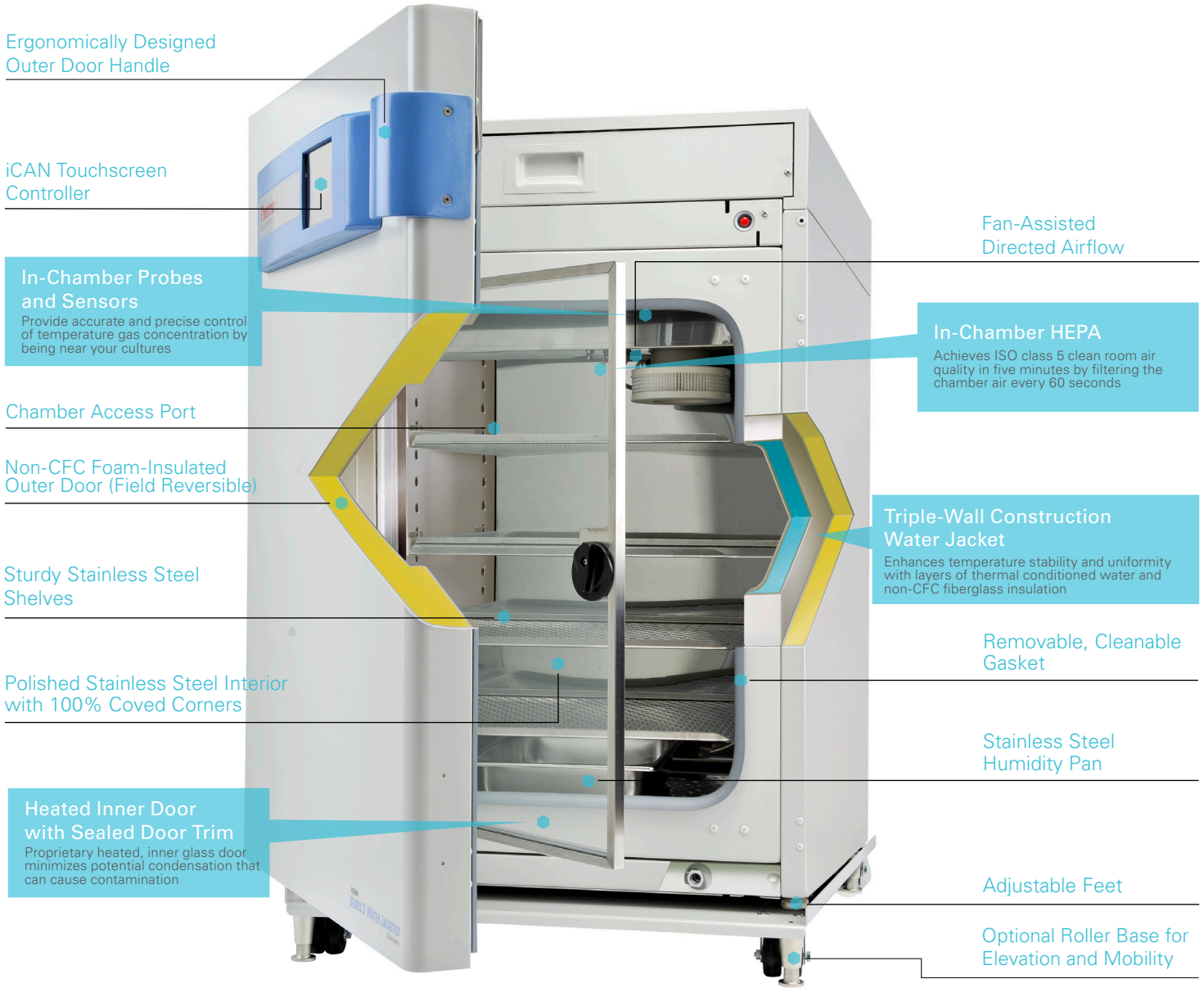
Advanced infrared (IR) sensors for precise monitoring where temperature and humidity levels are less predictable due to frequent door openings.

Enhanced flexibility with complete O₂ control.

Many cell cultures thrive best in CO₂ incubators with controlled levels of oxygen. Select an O₂ option to simulate physiological or hypoxic environments in a range of 1–20%. A dedicated O₂ display set point and control allow for accurate monitoring.

Forma Series 3 Incubators ▶
are easily stacked.





Trust Thermo Scientific™ Smart-Vue™

wireless monitoring solution to monitor critical samples stored inside your CO₂ incubators.

Assists with conformance to a growing body of regulatory standards including 21 CFR part 11.

For more information, visit thermoscientific.com/smart-vue.

Description	Cat. No.
Accessories are customer installed unless otherwise indicated.	
Humidity (RH) Sensor and Display	
Readable in 1% increments, includes low RH programmable alarm (alerts you of need to add water to humidity pan and a TC sensor that monitors humidity compensation.)	1900587
Shelving, Ductwork, and Humidity Pan	
Stainless Steel Shelf and Channels	190884
<i>Solid Copper Components –</i>	
Solid Copper Interior Ductwork (in place of stainless steel components), includes copper interior ductwork, four shelves, and humidity pan; factory installed at time of order	190656
Copper Interior Ductwork	1900057
Copper Perforated Shelf with Channels	190879
Copper Humidity Pan (Figure 1)	237020
Filters* and Decontamination Kit	
Replacement HEPA Filter (Figure 2)	760175
HEPA Value Pack (4 filters)	760209
10 Disposable Polypropylene In-Line Filters	760210
HEPA Filter Replacement Kit, includes HEPA, inline, and access port filters	1900067
Replacement HEPA ² VOC Filter	760200
HEPA ² VOC Filter Replacement Kit, includes HEPA ² , in-line, and access port filters	1900094
HEPA ² VOC Filtration System (kit), converts HEPA Filter Airflow System to HEPA ² Filtration System, includes HEPA ² filter and two silicone plugs	760199
Decontamination Kit, includes sample port, HEPA filters, sensor gasket, wheel, and miscellaneous components	190651
Door Kit, Lock, and Right Hand Door Swing	
Independent Inner Glass Door Kit (eight glass doors with latches), mounts inside heated inner glass door, is removable and can be autoclaved (Figure 3)	190650
Door Lock for Heated Inner Glass Door	190646
Right Hand Door Swing, factory installed at time of order	190666
CO₂ and N₂ Accessories	
<i>Built-In Gas Guards to monitor CO₂ or N₂, automatically switch from one cylinder to the other when supply is exhausted, factory installed –</i>	
CO ₂ Gas Guard	1900589
N ₂ Gas Guard	1900590
<i>Regulators with barbed connection and shut off valve –</i>	
Two-Stage CO ₂ Gas Regulator (Figure 4)	965010
Two-Stage N ₂ Gas Regulator	961027
Wall Clamp for a CO ₂ Bottle, includes cylinder holder with web strap	950316
Roller Base and Stand	
Roller Base (heavy-duty steel) with dual-wheel, swivel locking casters and leveling feet; pre-drilled for easy attachment; raises unit 2.8" (7.1cm) off the floor (Figure 5)	190647
Stand (heavy-duty steel) with leveling feet, raises unit 6.5" (16.5cm) off the floor	190648
Data Outputs, factory installed	
4-20 milliamp	192078

(continued)

*HEPA and HEPA² filters are rated a minimum 99.97% efficient at 0.3 microns. Filters are easily replaced without tools.

Description	Cat. No.
Miscellaneous Accessories	
Sealed Modular Incubator Chamber, purge with any gas mixture to create a "mini-incubator" inside your incubator for unusual gas and temperature controlled experiments, dimensions: 12.0" (30.5cm) circular chamber, 4.7" (11.9cm) high (Figure 6)	190043
Chamber Cooling Coil, use with refrigerated water bath/circulator to operate incubator at lower than ambient temperatures, factory installed	190645

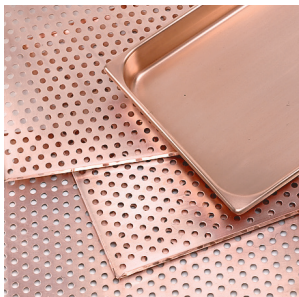


Figure 1
Copper Humidity Pan
and Shelves



Figure 3
Independent Inner
Glass Door Kit



Figure 5
Roller Base and Stand



Figure 2
HEPA Air Filter (VOC)



Figure 4
Two-Stage CO₂ Gas Regulator



Figure 6
Sealed Modular Incubator Chamber

Thermo Scientific Forma Series 3

Water Jacketed CO₂ Incubator

SPECIFICATIONS AND ORDERING INFORMATION

Specifications

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	+/-1°C

Temperature Safety

Sensor	Precision thermistor
Controller	Independent analog electronic
Setability	0.1°C

CO₂/O₂

CO ₂ /O ₂ Control	Better than ±0.1%
CO ₂ Range	0–20%
O ₂ Range	1–20%
Inlet Pressure	15 PSIG (1.0 bar)
CO ₂ Sensor	T/C or IR
O ₂ Sensor	Fuel cell
Readability & Setability	0.1%
Tracking Alarm	+/-1%

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	1.3" (3.3cm) with removable silicone plug with filter
CO ₂ Inlet	1/4" hose (barbed)

Unit Heat Load

115V/230V	344 BTUH (100 Watt)
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Shelves

Dimensions	18.5" x 18.5" (47.0cm x 47.0cm)
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	4, 17

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

4110/4120/4130/4140	115V, 50/60 Hz, 3.6 FLA (operating range 90–125V)
4111/4121/4131/4141	230V, 50/60 Hz, 2.0 FLA (operating range 180–250V)
Circuit Breaker/	6 Amps/2 Pole

Power Switch

Convenience Receptacle	75 Watts max. (one per chamber)
Plug	115V: NEMA 5-15P Plug 230V: CEE 7/7 Plug

Alarm Contacts Power interruption; deviation of temp, CO₂, O₂, RH; customer connections through jack on back of unit

Data Outputs (opt.) USB (standard), 4–20 milliamp (optional)

Dimensions

Exterior	26.0"W x 39.5"H x 25.0" USB Port (standard), 4-20 ma (optional)*F-B (66.0cm x 100.3cm x 63.5cm)
Interior	21.3"W x 26.8"H x 20.0"F-B (54.1cm x 68.1cm x 50.8cm)

Weight

Net	265 lb (120.2 kg)
Net Operational	365 lb (165.6 kg)
Shipping (Motor)	324 lb (147.0 kg)

Ordering Information

Cat. No.	CO ₂	O ₂	Voltage
4110	T/C	No	115
4111	T/C	No	230
4120	IR	No	115
4121	IR	No	230
4130	T/C	Yes	115
4131	T/C	Yes	230
4140	IR	Yes	115
4141	IR	Yes	230

All units are UL Listed to United States and Canadian requirements and bear the CE Mark.

*50°C (122°F) on Model 4120 (4121), 45°C (113°F) on Models 4130 (4131) and 4140 (4141).

**Truncated





WolfLabs

Pricing on any accessories shown can be found by keying the part number into the search box on our website.

The specifications listed in this brochure are subject to change by the manufacturer and therefore cannot be guaranteed to be correct. If there are aspects of the specification that must be guaranteed, please provide these to our sales team so that details can be confirmed.

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Please contact us if this literature doesn't answer all your questions.