Thermo Scientific Forma® Reach-In CO_2 Incubator

Designed for growing needs

Uniform Performance

High Capacity Reach-In that Grows with Your Needs

Our full-featured Thermo Scientific Forma Reach-In CO_2 Incubator is the reliable reach-in that will meet your application needs today and in the future – without requiring expensive add-on options. This durable unit is ideal for culturing large volumes of patient samples for bacterial growth, performing short-term growth studies, and working with large volume products. The reach-in provides elevated RH to prevent product desiccation in medium-term cultures, and maintains temperature uniformity even when equipment is installed in the chamber (e.g., cell rollers, rockers, shakers, spinners, or stirrers).

Tight temperature uniformity contributes to an ideal culturing environment, even when the chamber is completely full.

Valuable features are included, rather than optional, ensuring cost-effectiveness and ultimate flexibility for a wide range of applications.

This carefully designed reach-in is easy to configure and use. It includes powerful, intuitive Enviro-Scan® controls that are common to other Thermo Scientific Forma products, a selectable humidity range, and accessories for specialized needs, including shelf systems to support two shakers or extra-heavy product loads.

The Thermo Scientific Forma Reach-In CO_2 Incubator – it's built to last; it's designed to accommodate your growing needs.

HIGH CAPACITY MODEL 3950 (3951)

- **Roomy 29.0 cu. ft. interior volume**
- **Five adjustable shelves included**
- **Swivel, locking casters for mobility**
- **All stainless steel interior for durability**
- **Access ports and interior outlet for convenience**

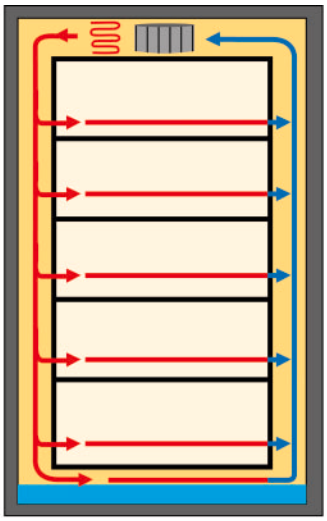
Tight Temperature Uniformity for Ideal Culturing

Temperature uniformity contributes to an ideal culturing environment. You can be confident of optimum temperature uniformity and recovery when you put this high capacity chamber to the test with large product loads and low output, heat-generating equipment.

Advantages of a Directed Horizontal Laminar Airflow System

Our reach-in incubator's directed airflow system promotes an ideal growth environment. The proven design includes a positive pressure feed plenum on the left side of the chamber and a negative pressure return plenum on the right. This combination directs air across the surface of each solid shelf.

Even when filled with samples or equipment, each shelf receives a consistent flow of conditioned air for optimum temperature uniformity and recovery. By design, the feed plenum cannot be blocked by the chamber's contents.



Our directed airflow design

As opposed to our horizontal airflow system, top-to-bottom (non-directed) airflow systems use a top-mounted fan to push air down through wire shelves. Temperature uniformity and recovery can deteriorate quickly when shelves are filled because air movement is blocked. That temperature variation, alone or when combined with frequent door openings, may compromise growth conditions or make process validation difficult.

The Thermo Scientific Forma Reach-In CO_2 Incubator's directed airflow minimizes the risk of product desiccation and loss, and wasted time and money due to poor temperature uniformity and recovery.

Valuable Features Included for Cost-Effectiveness and Flexibility – Right from the Start!

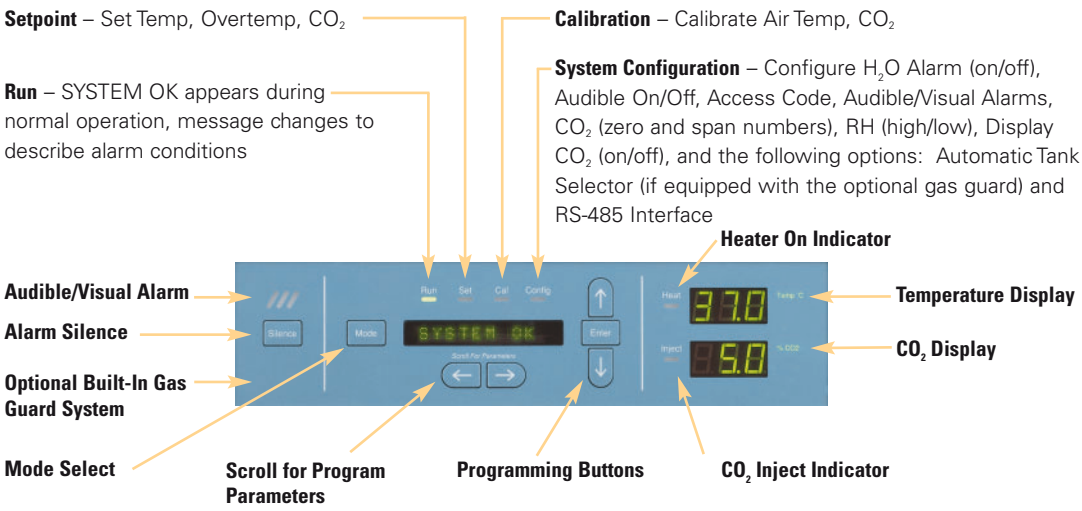
Our rugged 29.0 cu. ft. (821.2 liters) Thermo Scientific Forma Reach-In CO_2 Incubator is loaded with valuable features that will serve you from day one. You don't need to purchase a range of expensive options to create a chamber that truly meets your needs. Primary features for ultimate flexibility are already built-in.

- Swivel, locking casters ensure easy mobility for installation and cleaning. Leveling feet provide stability for added safety in the lab.
- Heated triple-pane glass door minimizes condensation and permits a clear view of your product.
- Standard remote alarm contacts and available data outputs allow connection to an in-house monitor/alarm system to track chamber conditions, helping you meet internal and regulatory documentation requirements.
- Two thru-wall access ports (one on right and left sidewalls) make it possible to add probes, sensors, power cords, etc. without altering the cabinet.
- Interior and exterior accessory receptacles provide a convenient power source.
  - Interior GFCI duplex receptacle on the 115V Model 3950 (single European 230V CEE 7 on Model 3951), located in the upper right corner of the rear wall, permits the use of shakers, cell rollers, and other equipment inside the chamber, eliminating the inconvenience of an extra external power strip.
  - Exterior receptacle, located on the upper right side of the control panel, is available for connecting an optional recorder or other equipment.
- Heavy-duty, solid stainless steel shelves are easy to clean, saving time and effort; more corrosion resistant than coated wire shelves for long life; and adjustable on 2.0" (5.1cm) centers for convenience.
- Additional reinforced shelving systems are available for increasing shelf load and maximizing stability when used with heavy product load or equipment, such as our Thermo Scientific Forma Orbital Shakers.
- Stainless steel interior is more durable and corrosion resistant than plastic or painted metal, ensuring a long life and minimizing equipment costs.

Easy to Configure and Use

Quality construction. Reliable performance. Intuitive controls. Our reach-in CO_2 incubator is designed for ease of use and long life.

- Three-setting RH system – off, medium, high – is easy to use, reliable, and can be customized for your application.
- Three water fill options – automatic, semi-automatic, and ergonomic manual – accommodate your facility's setup and provide the convenience of a long time period between refills.
- Enviro-Scan Microprocessor Message Center (shown below) allows you to control all parameters without complicated programming.



Cell Roll System

The optional cell roll system allows extensive production of monolayer cell cultures in standard roller culture vessels. Oxygenation and exposure of the cells to the media growth area are improved. Culture yields are increased by the uniform temperature control and cell roll system's continuous, gentle rotation.

The reach-in accommodates a cell roller up to 7 decks high with 5 positions per deck for a maximum total of 35 positions, or bottles.

Achieving maximum capacity requires a Model 4862 (4868) three tier cell roller base (15 positions), four add-on tiers (20 positions), and a reinforced floor/ramp.

All position drive is standard. Adjustable speed control provides precise speeds of 0.125 to 6.25 RPM with ±1.0% accuracy, based on 110mm bottles.

Stock No.	Description
4862	Three Tier Cell Roller Base (15 positions), 120V, 50/60 Hz, 29.8"W x 27.8"H x 24.4"F-B (75.7cm x 70.6cm x 62.0cm)
4868	Same as Model 4862 but 230V, 50/60 Hz
190049	Add-On Tier (5 positions), 29.8"W x 7.1"H x 24.4"F-B (75.7cm x 18.0cm x 62.0cm), customer installed
190777	Reinforced Floor with Removable Ramp, ramp extends 23.0" (58.4cm), factory installed
500182	Same as No. 190777 but customer installed
228077	Rotation Alarm System, includes annunciator jack, factory installed
228078	Battery Back-Up, provides 24 hours of power if a power failure occurs, factory installed
475560	110mm x 285mm Glass Bottles (4 per case)

(Additional accessories are listed on page 6.)

Specifications

Temperature

Control	±0.1°C
Range	5°C above ambient to 60°C (140F)
Uniformity	±0.3°C @ 37°C (98.6F)
Tracking Alarm	User-programmable low

Overtemperature

Sensor	Precision thermistor
Setability	0.1°C
Function	User-programmable, action (shuts off heat), and indicator
Controller	Independent analog electronic

Temperature Safety

Sensor	Independent thermostat
Controller	Independent analog electronic

CO_2

Control	Better than ±0.1%
Range	0-20%
Inlet Pressure	15 PSIG (1.0 bar)
Sensor	T/C (thermal conductivity)
Readability & Setability	0.1%
Tracking Alarm	User-programmable high/low

Humidity

Input Water Quality	50K to 1Meg Ohm resistance
Selectable Ranges	Off, Medium >80%, High >90%
Humidity Reservoir	4 gallons (15.1 liters)
Water Level Alarm	User-programmable on/off

Fittings

Access Port	2.4" (6.1cm) I.D., one on each side, with stopper
CO_2 Inlet	1/4" hose (barbed)
Water Inlet	1/4" MPT
Condensate Drain	3/8" FPT
Overflow Drain	3/8" MPT

Unit Heat Load

115V/230V	510 BTUH (150 Watts), 129 kcal per hour

Shelves

Dimensions	30.6" x 25.8" (77.7cm x 65.5cm)
Construction	Type 304, 2B finish, solid stainless steel
Surface Area	5.4 sq. ft. (0.5 sq. m)
Max. per Chamber	145.8 sq. ft. (13.5 sq. m)
Standard, Maximum	5, 27

Construction

Interior Volume	29.0 cu. ft. (821.2 liters)
Interior	Type 304, 2B finish, stainless steel
Exterior	Cold-rolled steel, powder coated
Insulation	2.0" (5.1cm) fiberglass
Exterior Door	Heated, triple pane, tempered glass
Outer Door Gasket	Molded vinyl

Electrical

3950	115V, 50/60 Hz, 10.0 FLA (Operating range 90-125V includes voltage fluctuations)
3951	230V, 50/60 Hz, 6.0 FLA (Operating range 180-250V includes voltage fluctuations)
Circuit Breaker/ Power Switch	3950: 15 Amps/2 Pole 3951: 8 Amps/2 Pole
Exterior Convenience Receptacle	75 Watts maximum (matches cabinet voltage)
Interior Convenience Receptacle	230 Watts maximum (matches cabinet voltage)
Plug	115V: NEMA 5-15P Plug 230V: CEE 7/7 Plug
Alarm Contacts	Power interruption, deviation of temp and CO_2, customer connections through jack on back of unit
Data Outputs (opt.)	RS-485, 0-1V, 0-5V, 4-20 milliamp (select one)

Dimensions

Exterior	38.0"W x 80.0"H x 33.0"F-B (96.5cm x 203.2cm x 83.8cm)
Interior	31.0"W x 60.0"H x 27.0"F-B (78.7cm x 152.4cm x 68.6cm)

Weight

Net	500 lbs. (226.8 kg)
Shipping (Motor)	660 lbs. (299.4 kg)

Specifications are based on nominal voltages of 115V or 230V in ambients of 22°C to 25°C (71.6F to 77F).
Both units are UL Listed to United States and Canadian requirements and bear the CE Mark.

Accessories and Warranty

Accessories are customer installed unless indicated otherwise. (Refer to page 4 for a description of the cell roll system.)

Carboy Kit

Carboy Kit (No. 191596) makes it easy to semi-automatically fill the reach-in. The carboy, which can be mounted on either side of the reach-in, can be carried to the water source or filled while mounted.

Kit includes an autoclavable 2 gallon (7.8 liters) carboy, valve, adapter, hose, and mounting bracket.

Shelves and Reinforced Shelf Systems

Stock No.	Description
224139	Solid Stainless Steel Shelf with Channels
224155	Perforated Stainless Steel Shelf with Channels
	Solid Stainless Steel Reinforced Shelf Systems –
224161	Adjustable Reinforced Shelf with Channels, increases shelf load to 150 lbs. (68.0 kg) maximum with shelf fully inserted and stationary (maximum 2 per unit, not for shakers), adjustable on 2.0" (5.1cm) centers, can be removed for cleaning
1900005	Two Fixed Reinforced Shelves, provide extra support for lab equipment (e.g., 2 Forma Orbital Shakers, 250 RPM maximum each), factory installed 1.0" and 30.0" (2.5cm and 76.2cm) above the floor, rubber isolators instead of casters are installed on the reach-in for added stability

Data Outputs (select one), factory installed

Stock No.	Description
190523	RS-485 interface
190512	4-20 milliamp
190543	0-5V analog
190544	0-1V analog

Additional Accessories

Stock No.	Description
190239	Lexan® Inner Door Kit, factory installed
190514	Door Lock, factory installed
190591	Door Glass Cover, factory installed
	6", 7 Day Circular Chart Recorders –
201155	Single Pen, 115V
201156	Single Pen, 220V
201159	Dual Pen, 115V, 1 probe, temp/RH
201160	Dual Pen, 220V, 1 probe, temp/RH
190164	Additional Thru-Wall Access Port, 2.4" (6.1cm) I.D., factory installed
1900000	Built-In CO_2 Gas Guard, factory installed
6003950	IQ/OQ, MS Windows®-compatible document disk for process customization and detailed checklists to qualify unit setup and operation

Warranty

We confidently back our Forma Reach-In CO_2 Incubator with a full one year parts and labor warranty.

Thermo SCIENTIFIC

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