

# Optimum uniformity plus a wide temperature range



# A Choice of Environmental Chambers to Meet Your Specific Needs

From stability testing to cell culturing, CO<sub>2</sub>, RH, and refrigeration control to temperature-only, and 311 L to 821 L, Thermo Scientific™ environmental chambers are designed to last and meet your needs now and in the future.

If you require a high precision cabinet to meet ICH, FDA, TAPPI, DIN12880 or national testing standards, our **Thermo Scientific 3948/3907 environmental chamber series** is the ideal choice.

- Optimum uniformity and a wide temperature range designed for easy compliance with regulatory requirements.
- Rugged construction and durable shelving for long life.
- Broad range of options to create the perfect fit for your applications.

Consider our Thermo Scientific 3962 reach-in incubator/environmental chamber if you are focused on elevated temperature-only segments of drug stability and culture.

- Optimum uniformity and an elevated temperature range designed for easy compliance with regulatory requirements.
- Rugged construction and durable shelving for long life.
- Valuable features for flexibility and cost-effectiveness.

# At-A-Glance Chamber Comparison

Туре	Thermo Scientific Cat. No.	Temp Range	Uniformity	RH	Size (L)	CO <sub>2</sub>
	3948	0°C TO 60°C	±0.3°C @ 25°C to 37°C	Above ambient to 95% @ 37°C	821	Optional
Stability	3907	0°C TO 60°C	±0.3°C @ 25°C to 37°C	Above ambient to 95% @ 37°C	311	Optional
	3962	5°C above ambient to 60°C	±0.4°C @ 30°C ±0.3°C @ 37°C ±0.5°C @ 45°C	N/A	821	N/A

Performance values are based on 15 point measurement at ambient temperature of 22°C and 230V line voltage

# Thermo Scientific Stability Chambers for a Multitude of Applications

This series of environmental chambers meets International Conference on Harmonization (ICH) guidelines for drug substance and product storage testing. The units are ideal for drug stability studies, shelf life testing for packaged products, and insect and other large-scale biological research.

# Optimum uniformity and a wide temperature range designed for easy compliance with regulatory requirements

These chambers feature a 0°C to 60°C (32°F to 140°F) temperature range that can be set in 0.1°C increments. The broad temperature range, and optimum temperature uniformity and recovery contribute to an ideal test environment, even when the chamber contains large product loads and low output, heat-generating equipment.

# Advantages of our directed horizontal laminar airflow system

Our directed airflow system (shown below) promotes an ideal growth environment. The enhanced design includes a positive pressure feed

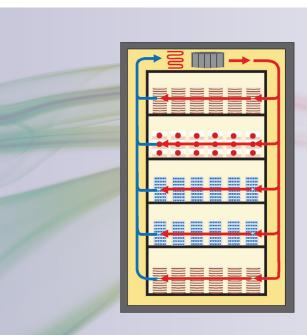
plenum on the right side of the chamber and a negative pressure return plenum on the left to distribute the airflow uniformly throughout the chamber.

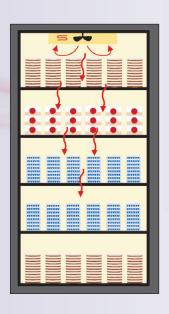
This combination directs air across the surface of each solid shelf. Even when filled with samples or equipment, each shelf receives a consistent flow of conditioned air for optimum temperature uniformity and recovery.

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 variation in temperature, alone or when combined with frequent door openings, may compromise environmental conditions or make process validation difficult.

Standard 4 to 20 milliamp output connects to most alarm/monitoring systems, allowing you to meet internal and regulatory product documentation requirements. Chart recorders are also available.

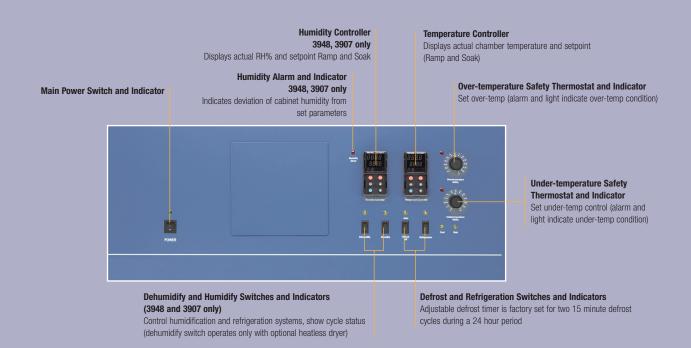






The Thermo Scientific directed airflow design (left) versus a top-to-bottom, undirected airflow design (right).

The directed airflow minimizes the risk of product desiccation and loss, and wasted time and money due to poor temperature uniformity and recovery.



# Rugged construction and durable shelving for long life

- Exterior cabinet is 18 gauge cold-rolled steel, powder coated for durability and a high quality appearance that resists scratches and chipping.
- 51mm (2.0") thick, non-CFC, foamed-in-place polyurethane cabinet insulation provides maximum product thermal protection and increased rigidity for reliable daily use.
- Phenolic-coated evaporator protects against corrosive by-products or agents in the chamber atmosphere (e.g., secretions from insects such as flies), designed for long life.
- Solid, stainless steel interior is more durable and corrosion-resistant than plastic or painted metal, designed for long life and minimizing equipment costs.
- Heavy-duty, solid, stainless steel shelves are easyto-clean, saving time and effort; more corrosionresistant than coated wire shelves for long life; and adjustable for convenience.
- 821 L models include 6 shelves that are adjustable on 76mm (3 in.) centers.
- 311 L model includes 3 shelves that are adjustable on 51mm (2 in.) centers.
- Reinforced floor/shelf components for 821 L models are available so you can use shakers, cell rollers, or other heavy equipment or product loads inside the chamber to meet a variety of applications.
- Swivel, locking casters designed for easy mobility during installation and cleaning. Leveling feet provide stability and added safety in the lab.

# Broad range of options to create the perfect fit for your applications

Many options are available so you can tailor this series to your specific applications.

#### Factory-installed options (ordered separately) include:

- Choice of access ports for inserting data logging sensors or cables.
- Convenience receptacles to run electrical devices in chamber.
- · Choice of chart recorders for data logging.
- Choice of data outputs for monitoring/alarm (3960/3962 models only).
- Infrared CO<sub>2</sub> Control Package for control of a CO<sub>2</sub> environment.
- Heatless dryer for low humidity conditions check temperature / humidity chart (see page 5 for details).
- Stainless steel glass door cover for light sensitive applications.
- Door options include door lock, left-hand door, and Lexan<sup>™</sup> inner door.
- Choice of shaker support systems provides system safety.
- Temperature mapping and calibration certificate customized.

#### Accessories/on-site options (ordered separately) include:

- Extra and special shelving.
- Reinforced floor options for heavy weights up to 68 kg (150 lb.).
- Sensaphone<sup>™</sup> telephone dialing systems interfaces with standard touch-tone phone.

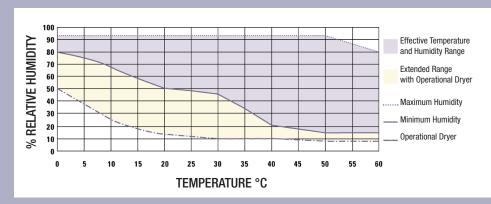
#### Options for the humidity system:

- Condensate pump kit recommended when the accessible drain on lab wall is well above the drain on back of environmental chamber.
- Condensate evaporator external heating device which burns off water that drips out the back of the unit when there is no drain available.
- Cell roll system for production of monolayer cell cultures (see page 7 for details).
- On site IQ/OQ/PQ validation services.

#### See page 11 for order numbers, model capabilities and additional information.

### Temperature/Humidity Performance Chart for 3948 and 3907

This chart illustrates the maximum and minimum attainable humidity within the cabinet at a given set temperature under the following nominal conditions: refrigeration on, defrost off, no wet bulb recorder, no air exchange, set for 22.2°C (72°F) and 50% RH ambient. Optional heatless dryer is available for lower humidity levels.



### **Chamber Specifications**

Thermo Scientific Cat. No.	3948 **	3907**	
HASCRINTION		311 L Incubated/Refrigerated Environmental Chamber with humidity control	
Voltage	230V, 50/60 Hz 230V, 50/60 Hz		
Temperature			
Control	±0.1°C @ 25°C to 37°C (77°F to 98.6°F)	±0.1°C @ 25°C to 37°C (77°F to 98.6°F)	
Range	0°C to 60°C (32°F to 140°F)	0°C to 60°C (32°F to 140°F)	
Sensor	RTD	RTD	
Controller	Microprocessor, PID	Microprocessor, PID	
Programmability	Ramp & Soak (to 40 steps)	Ramp & Soak (to 40 steps)	
Setpoint	Digital	Digital	
Display	Digital dual LED	Digital dual LED	
Readability & Setability	0.1°C	0.1°C	
Uniformity*	±0.3°C @ 25°C to 37°C (77°F to 98.6°F)	±0.3°C @ 25°C to 37°C (77°F to 98.6°F)	
Temperature Safety			
Sensor & Controller	Thermostat	Thermostat	
Setpoint	Analog reference dial	Analog reference dial	
Alarm	Audible/visual	Audible/visual	
Refrigeration			
Compressor	185W (1/4 HP), air-cooled	185W (1/4 HP), air-cooled	
Refrigerant	Non-CFC, R134A refrigerant	Non-CFC, R134A refrigerant	
Humidity			
Input Water Quality 50K-1Megohm resistance		50K-1Megohm resistance	
Input Water Volume	3.78 L/hour (1 gallon/hour) 3.78 L/hour (1 gallon/hour)		
Input Water Pressure	Gravity to 2.76 bar (40 psi)  Gravity to 2.76 bar (40 psi)		
RH	Above ambient to 95% @ 37°C (98.6°F) ±5.0% RH Above ambient to 95% @ 37°C (98.6°F)		
Sensor	Bulk polymer Bulk polymer		
Controller	Microprocessor, PID	Microprocessor, PID	
Programmability	Ramp & Soak (to 40 steps)	Ramp & Soak (to 40 steps)	
Setpoint	Digital (direct set in % RH)	Digital (direct set in % RH)	
Display	Digital, dual LED (direct read in % RH)	Digital, dual LED (direct read in % RH)	
Readability & Setability	1.0%	1.0%	
Steam Generator Initial fill approx. 1 liter (1 qt.)		Initial fill approx. 1 liter (1 qt.)	
Setable Alarm	Audible/visual	Audible/visual	
Certification	CE	CE	

<sup>\*</sup>Six shelves in 3948; three shelves in 3907; uniformity is ±0.5°C at all other temperature parameters. Values based on 15 point measurement at ambient temperature of 22°C, 230V line voltage.

<sup>\*\*</sup>All models require a drain unless fitted with the optional Condensate Evaporator (No. 1900031). They also require a constant water source.

## **Chamber Specifications continued**

Thermo Scientific Cat. No.	3948 **	3907**	
821 L Incubated/Refrigerated Environmental Chamber with humidity control		311 L Incubated/Refrigerated Environmental Chamber with humidity control	
Fittings**			
Fill Port	1/8" female NPT	1/8" female NPT	
Drain Port (bottom)	3/8" FPT & 3/8" O.D. P-trap right rear	3/8" FPT & 3/8" O.D. P-trap right rear	
Unit Heat Load			
220V	1750W (6000 BTU/hour)	1750W (6000 BTU/hour)	
Dimensions			
Exterior			
Width	96.5cm (38 in.)	96.5cm (38 in.)	
Height	224.8cm (88.5 in.)	130.8cm (51.5 in.)	
F-B	81.3cm (32.0 in.)	81.3cm (32.0 in.)	
Interior			
Width	78.7cm (31.0 in.)	78.7cm (31.0 in.)	
Height	152.4cm (60.0 in.)	60.9cm (24.0 in.)	
F-B	68.6cm (27.0 in.)	68.6cm (27.0 in.)	
Shelves			
Dimensions	77.8cm x 65.6cm F-B (30.6 in.W x 25.8 in.)	77.8cm x 65.6cm F-B (30.6 in.W x 25.8 in.)	
Construction	Solid stainless steel, reinforced	Solid stainless steel, reinforced	
Surface Area per Shelf	0.5 sq. m (5.4 sq. ft.)	0.5 sq. m (5.4 sq. ft.)	
Max. Surface Area per Chamber	9.7 sq. m (104.3 sq. ft.)	5.5 sq. m (59.4 sq. ft.)	
Standard/Maximum Number of Shelves	6, 19	3, 11	
Load per Shelf	15.9 kg (35 lbs.), slide in/out 22.7 kg (50 lbs.), stationary	15.9 kg (35 lbs.), slide in/out 22.7 kg (50 lbs.), stationary	
Construction			
Interior Volume	821.2 liters / 29.0 cu. ft.	311.5 liters / 11.0 cu. ft.	
Interior Material EN standard 1.4301, 2B, Stainless Steel		EN standard 1.4301, 2B, Stainless Steel	
Exterior Material	Cold-rolled steel, powder coated	Cold-rolled steel, powder coated	
Outer Door Gasket	Four-sided, vinyl compression	Four-sided, vinyl compression	
Electrical	230V,50/60 Hz 15.0 Amps	230V,50/60 Hz 15.0 Amps	
Plug	CEE 7/7 •••	CEE 7/7 •••	
Dry Contacts	Common, NO, NC	Common, NO, NC	
Data Output	4-20 milliamp, temperature and RH	4-20 milliamp, temperature and RH	
Power Switch	2 Pole	2 Pole	
Weight			
Net	347.0 kg (765 lbs.)	260.8 kg (575 lbs.)	
Shipping (motor)	426.4 kg (940 lbs.)	324.3 kg (715 lbs.)	

<sup>\*\*</sup>All models require a drain unless fitted with the optional Condensate Evaporator (No. 1900031) and a constant water source.

# Incubator/Environmental Chamber for Elevated Temperature Applications

The 821 L (29 cu. ft.) chamber 3962 offers precise temperature control in a range of 5°C above ambient to 60°C (140°F), making this unit ideal for clinical applications, elevating temperature stability

- Large size for high volumes and a broad range of products.
- Heated glass door for minimal condensation and a clear view.
- Interior and exterior convenience receptacles, and five adjustable shelves.
- Thermo Scientific™ Enviro-Scan™ controls with easy-to-read display of actual temp studies, and shelf life testing.

Thermo

Model Number 3962



### **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 environmental chamber 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 option 4862: a 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  $\pm 1.0\%$  accuracy, based on 110mm bottles.

# Optimum Uniformity and an Elevated Temperature Range Designed for Easy Compliance with Regulatory Requirements

Our directed airflow system promotes an ideal growth environment. The proven design includes a positive pressure feed plenum and a negative pressure return plenum. 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. (Refer to the diagram on page 3.)



### Intuitive, powerful Enviro-Scan

- > Designed to ensure precise temperature control without complicated programming
- > Provides audible/visual under-temperature and overtemperature alarms for peace-of-mind
- > Includes an easy-to-read display for convenient, continuous monitoring
- Enviro-Scan operating modes include Run, Setpoint, Calibration, and System Configuration.
- 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.
   Chart recorders are available.



# Durable construction and shelving for long life

- Exterior cabinet is 18 gauge cold-rolled steel, powder coated for durability and a high quality appearance that resists scratches and chipping.
- Maximum product thermal protection and added cabinet strength for reliable daily use are provided by the 51mm (2 in.) thick fiberglass cabinet insulation.
- Solid, stainless steel interior is more durable and corrosion-resistant than plastic or painted metal, ensuring long life and minimizing equipment costs.
- Five heavy-duty, solid, stainless steel shelves, adjustable on 51mm (2 in.) centers, are easy-to-clean, saving time and effort; more corrosion-resistant than coated wire shelves for long life; and adjustable for convenience.
- Reinforced floor/shelf components are available so you can use shakers, cell rollers, or other heavy equipment or product loads inside the chamber to meet a variety of applications.

# Valuable features included for cost-effectiveness and flexibility

Casters, access ports, convenience receptacles, heated glass door, and remote alarm contacts — all are included up-front. Our 3962 Incubator/ Environmental Chamber is prepared to meet your changing application needs without the added cost of expensive add-on options.

- Swivel, locking casters ensure easy mobility during installation and cleaning. Leveling feet provide stability and added safety in the lab.
- Thru-wall access ports, located on the right and left sides of the chamber, make it possible to add probes, sensors, etc. without altering the cabinet.
- Interior and exterior accessory receptacles provide a convenient power source.
  - Interior receptacle European 230V CEE 7 on 3962 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.



## **Chamber Specifications continued**

Thermo Scientific Cat. No.	3962	
Description	821 L Incubated Environmental Chamber	
Voltage	200-230V, 50/60 Hz	
Temperature		
Control	±0.1°C	
Range	5°C above ambient to 60°C (140°F)	
Uniformity	±0.4°C @ 30°C (86°F) / ±0.3°C @ 37°C (98.6°F) / ±0.5°C @ 45°C (113°F)	
Low Alarm	User programmable and indicator	
Over-temperature		
Sensor	Precision thermistor	
Setability	0.1°C	
Function	User programmable, action (shuts off heat), and indicator	
Temperature Safety (Cabinet)		
Sensor	Independent thermostat	
Туре	Independent analog electronic	
Fittings		
Access Port With Stopper	6.1 cm (2.4 in.) I.D., one on each side	
Unit Heat Load		
115V/230V	150W (510 BTU / hour); 129 kcal per hour	
Shelves		
Dimensions	77.7cm x 65.5cm F-B (30.6 in. W x 25.8 in.)	
Construction	2B finish, solid stainless steel	
Surface Area	0.5 sq. m (5.4 sq. ft.) per shelf	
Max. per Chamber	13.0 sg. m (140.4 sg. ft.)	
Standard/Maximum No. of Shelves	5, 26	
Loading	13.6 kg (30 lbs.) per shelf, fully inserted and stationary; not to exceed 136.0 kg (300 lbs.) total per cabinet	
Construction	3,000 - 3,000 -	
Interior Volume	821.2 liters (29 cu. ft.)	
Interior Material	Type 304, 2B finish, stainless steel	
Exterior Material	Cold-rolled steel, powder coated	
Insulation	5.1cm (2.0 in.) fiberglass	
Exterior Door	Heated, triple pane, tempered glass	
Outer Door Gasket	Molded vinyl	
Electrical		
	200/230V, 50/60 Hz, 5.0 Amps (Operating range 180-250V includes voltage fluctuations)	
Circuit Breaker/Power Switch	8 Amps; 2 pole	
Exterior Convenience Receptacle	75 Watts maximum (matches cabinet voltage)	
Interior Convenience Receptacle	230 Watts maximum (matches cabinet voltage)	
Plug	Plug 230V: CEE 7/7 Plug 💮	
Alarm Contacts	Temperature deviation and power failure; Common, NO, and NC; customer connections through RJ11 jack on rear of unit	
Data Outputs (opt.)	RS-485, 0-1V, 0-5V, 4-20 milliamp	
Dimensions	, 5, 6 6	
Exterior	96.5cm x 203.2cm x 83.8cm F-B (38.0 in. W x 80.0 in.H x 33.0 in.)	
Interior	78.7cm x 152.4cm x 68.6cm F-B (31.0 in. W x 60.0 in.H x 27.0 in.)	
Weight	TO TO THE TO THE TO CO. COUNTY DISTRIBUTE OF THE TOTAL STREET OF T	
Net	226.8 kg (500 lbs.)	
Shipping (motor)		
Certification	299.4 kg (660 lbs.)	
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Specifications are based on nominal voltages of 230V in ambients of 22°C to 25°C. Performance is plus or minus the least significant digit unless otherwise specified.

## Accessories (All are customer installed unless indicated otherwise)

Thermo Scientific Cat. No	Description		
Shelving			
Stainless Steel Shel	ves for 3948, 3907, and 3962		
224139	Solid Stainless Steel Shelf and Channels for 3948, 3907 and 3962		
224155	Perforated Stainless Steel Shelf and Channels for 3948, 3907 and 3962		
224161	Reinforced Stainless Steel Shelf and Channels for 3948, 3907, and 3962; two per unit max., not for shakers; 68.0 kg load maximum with shelf fully inserted and stationary		
Shaker Support Sys	tem, factory installed		
1900005*	Two shelf shaker support system without duplex outlet, each shelf will hold 90 kg. for 3948 and 3962. Must be ordered with duplex outlet (505099 or 505094)		
190761*	Three shelf shaker support system includes duplex outlet, each shelf will hold 90 kg for 3948 and 3962		
Door Options, factor	y installed		
190239	Lexan® Inner Door Kit (five doors) for 3948 and 3962; factory installed		
190514	Door Lock Assembly for 3948 and 3962; factory installed		
190597	Left-Hand Door Swing Kit for 3948; factory installed		
Stainless Steel Door	r Glass Covers		
190591	For 3948 and 3962; factory installed		
190892	For 3948 and 3962**		
Reinforced Floor Op	tions		
500182***	Reinforced Floor with Removable Ramp for 3948 and 3962; accommodates a cell roller		
190777***	Same as No. 500182 but factory installed		
Access Ports, factor	y installed		
505101	Port for 3948 and 3907; 38mm I.D.; on center right wall		
193004	51 mm nominal ID port with cover		
190164	Port for 3962, 61 mm I.D., customer specified location		
193005	102 mm nominal ID port with cover		
193006	152 mm nominal ID port with cover		
Convenience Recep	tacles, factory installed		
505094	230V (includes separate line cord) for 3948 and 3907; located on center rear wall		
Data Outputs (selec	t one) for 3962, factory installed		
190523	RS-485 interface (compatible with 1535 Monitor/Alarm only)		
190512	4-20 milliamp		
190543	0-5V		
190544	0-1V		
Sensaphone Teleph	one Dialing Systems, interface with standard touch-tone phone		
400047	For up to four input channels		
400134	For up to eight input channels		

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We confidently back our environmental chambers with a standard limited two-year parts and labor warranty.

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Thermo Scientific Cat. No	Description		
Chart Recorders and	Paper		
6 in., 7 Day Chart Reco (32°F to 140°F)	rders for 3948 and 3907; 0°C to 60°C		
201144	Single Pen, factory installed		
201145	Single Pen, onsite installation		
201146	Dual Pen, factory installed		
201147	Dual Pen, onsite installation		
6 in., 7 Day Chart Reco	rders for 3962, 0°C to 60°C (32°F to 140°F)		
201156	Single Pen, 230V, 50/60 Hz		
6 in. Chart Paper for Re			
180006	For Single Pen, 0°C to 60°C (32°F to 140°F)		
197030	For Single Pen, -10°C to 70°C (14°F to 158°F)		
197075	For Single or Dual Pen, 0°C to 100°C (32°F to 212°F)		
RH System Options			
1900391	Condensate Evaporator for 3948 and 3907; includes separate line cord; 240V		
1900139	Heatless Dryer Kit for 3948 and 3907, for sub-ambient chamber RH, factory installed; The heatless dryer requires an air supply of 6.2 bar (90 PSI) at 17 m3/h (10 CFM) compressor, at minimum. It is recommended that the air supply be greater than the minimum required by the dryer.		
<b>Deionization Cartridge</b>	e Assembly for chambers with humidity and no DI water source		
019-168-00	DI cartridge assembly includes DI cartridge, wall bracket, pressure regulator and gauge and 1/4" flexible tubing		
585-036-00	Replacement DI cartridge		
<b>Calibration Certificate</b>	and Temperature Mapping with Report		
260045	Temperature Mapping Report (factory installed)		
260049	Calibration Certificate (specify test parameters)		
cGxP Protocols and o	n site Validation Services****		
GLP Level Protocols (IQ	0Q)		
IOQD0CE89003499	For 3962		
IOQD0CE89003710	For 3948, 3907		
GMP Level Protocols (IC	Q OQ PQ)		
IOPQD0CE89003499	For 3962		
IOPQD0CE89003710	For 3948, 3907		
GLP Level Field Validati (protocol included at no	on (IQ OQ) Performed at the customer site		
OQPCKE89003499 For 3962			
IOQPCKE89003710	For 3948, 3907		
GMP Level Field Validat (protocol included at no	ion (IQ OQ PQ) Performed at the customer site extra charge)		
IOPQPCKE89003499	For 3962		
IOPQPCKE89003710	For 3948, 3907		
Miscellaneous Access	sories		
Infrared CO, Control P	ackages, factory installed		
1900227	For 3948 and 3907		
Cell Roll System			
4868	Three-Tier Cell Roller Base (15 positions), 230V, 50/60 Hz, 757mm W x 706mm H x 620mm F-B (29.8" x 27.8" x 24.4")		
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)		

<sup>\*</sup>Rubber isolators replace casters for maximum stability.

<sup>\*\*</sup>Must be installed by qualified personnel.

 $<sup>^{\</sup>star\star\star}$ Ramp extends approximately 584mm (23") in front of the chamber.

<sup>\*\*\*\*</sup>Specification sheets for protocol and field validations are available for review upon request.



#### thermoscientific.com/chambers

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