



A Choice of Environmental Chambers to Meet Your Specific Needs

From stability testing to cell culturing, CO₂, RH, and refrigeration control to temperature-only, and 11.0 to 29.0 cu. ft., Thermo Scientific™ Forma™ environmental chambers are built to last and will meet your needs now and in the future.

If you require a high precision cabinet to meet ICH, FDA, TAPPI, ASTM or national testing standards our 3920/3940/3911 Series is the ideal choice.

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

Consider our **Thermo Scientific 3960 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 for easy compliance with regulatory requirements
- Rugged construction and durable shelving for long life
- Valuable features designed for flexibility and cost-effectiveness

At-A-Glance Chamber Comparison

Type	Thermo Scientific Cat. No.	Temp Range	Uniformity	RH	Size (Cu. Ft.)	CO ₂	Lights
Stability	3940 (3949)	0°C TO 60°C	±0.3°C @ 25°C to 37°C	Above ambient to 95% @ 37°C	29.0	Optional	Optional*
	3920	0°C TO 60°C	±0.3°C @ 25°C to 37°C	N/A	29.0	Optional	Optional*
	3911 (3913)	0°C TO 60°C	±0.3°C @ 25°C to 37°C	Above ambient to 95% @ 37°C	11.0	Optional	N/A
	3960 (3961)	5°C above ambient to 60°C	±0.4°C @ 30°C ±0.3°C @ 37°C ±0.5°C @ 45°C	N/A	29.0	N/A	N/A

*Lights (Cat. No. See page 11) do not meet ICH guidelines.

Thermo Scientific 3920/3940/3911 Series 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 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

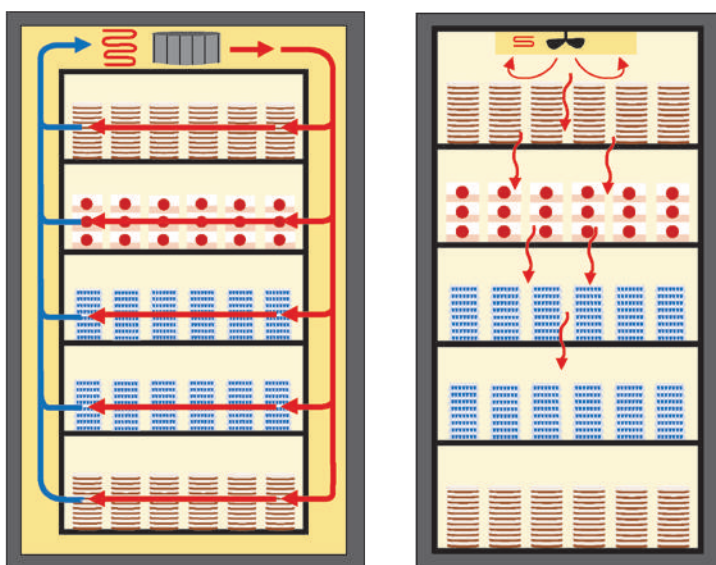
side of the chamber and a negative pressure return plenum on the left to distribute the airflow uniformly throughout the chamber.

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.

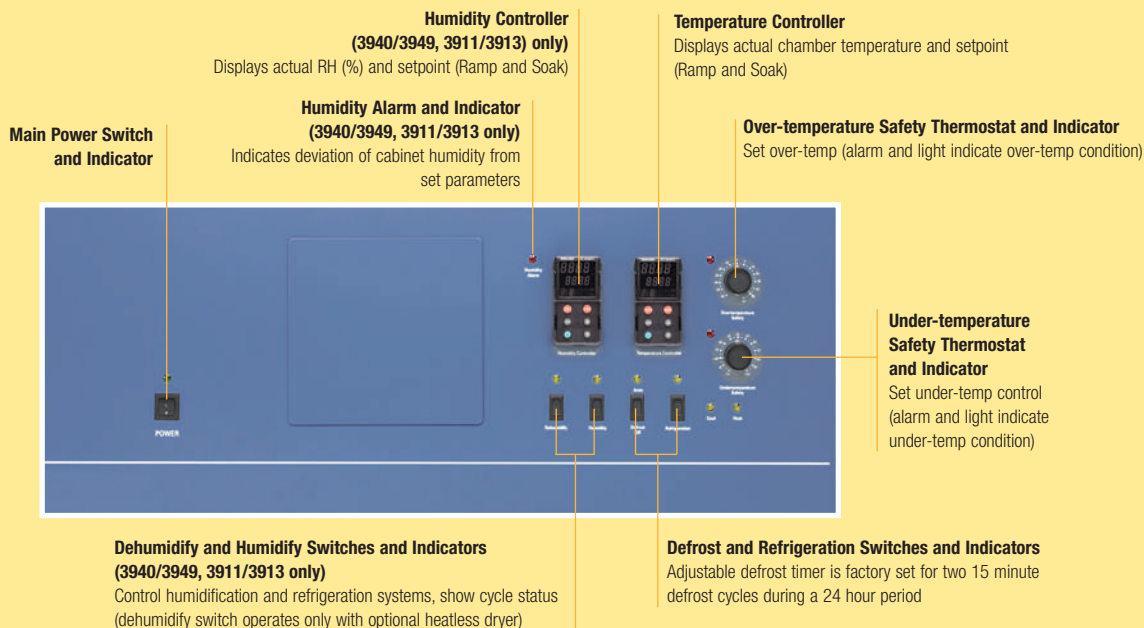
Standard 4 to 20 milliamp output connects to most alarm/monitoring systems, allowing you to meet internal and regulatory product documentation requirements. Chart recorders are also available.



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.
- 2.0" (5.1cm) 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), ensuring long life.
- Solid, stainless steel interior is more durable and corrosion-resistant than plastic or painted metal, ensuring long life and minimizing equipment costs.
- 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 for convenience.
- 29.0 cu. ft. models include 6 shelves that are adjustable on 3.0" (7.6cm) centers.
- 11.0 cu. ft. model includes 3 shelves that are adjustable on 2.0" (5.1cm) centers.
- Reinforced floor/shelf components for 29.0 cu. ft. 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 ensure easy mobility during installation and cleaning. Leveling feet provide stability and added safety in the lab.

Broad range of options create a 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 / 3961 models only).
- Infrared CO₂ Control Package for control of a CO₂ environment.
- Heatless dryer for low humidity conditions – check temperature / humidity chart (see page 5).
- Door light package for plant growth, seed germination, algae, small animal, insect studies.
- Stainless steel door glass for light sensitive applications.
- Door options include door lock, left-hand door, and Lexan™ inner door.
- Choice of shaker support systems provides system safety.
- Temperature mapping and calibration certificate – customized.

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

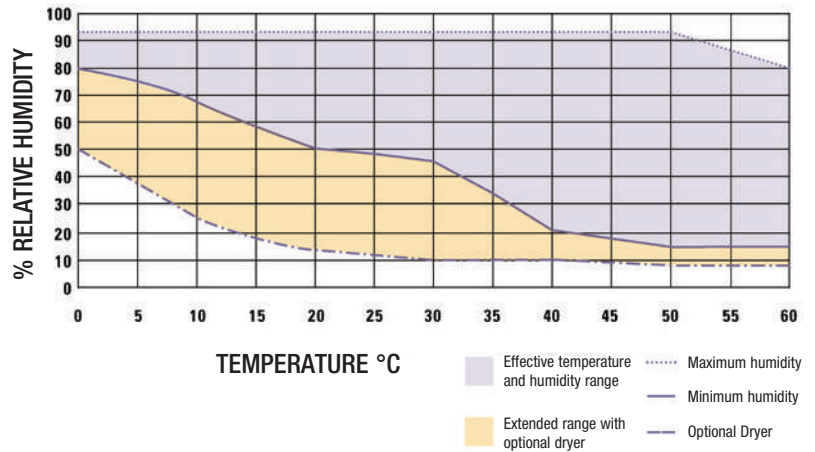
- Extra and special shelving.
- Reinforced floor options for heavy weights – up to 150 lb.
- Sensaphone™ telephone dialing systems – interfaces with standard touch-tone phone.
- Cell roll system for production of monolayer cell cultures (see page 7).
- On site IQ/OQ/PQ validation services.

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.

Temperature/Humidity Performance Chart for 3940 (3949) and 3911 (3913)

The following 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.	3920 **	3940 **	3949 **	3911 **	3913**
Description	29 cu. ft. Incubated/Refrigerated Environmental Chamber	29 cu. ft. Incubated/Refrigerated Environmental Chamber with humidity control		11 cu. ft. Incubated/Refrigerated Environmental Chamber with humidity control	
Voltage	120V, 60 Hz	208-220V, 60 Hz	220-240V, 50/60 Hz	208-220V, 60 Hz	220-240V, 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)		±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)		0°C to 60°C (32°F to 140°F)	
Sensor	RTD	RTD		RTD	
Controller	Microprocessor, PID	Microprocessor, PID		Microprocessor, PID	
Programmability	Ramp & Soak (to 40 steps)	Ramp & Soak (to 40 steps)		Ramp & Soak (to 40 steps)	
Setpoint	Digital	Digital		Digital	
Display	Digital dual LED	Digital dual LED		Digital dual LED	
Readability & Setability	0.1°C	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)		±0.3°C @ 25°C to 37°C (77°F to 98.6°F)	
Temperature Safety					
Sensor & Controller	Thermostat	Thermostat		Thermostat	
Setpoint	Analog reference dial	Analog reference dial		Analog reference dial	
Alarm	Audible/visual	Audible/visual		Audible/visual	
Refrigeration					
Compressor	1/4 HP, air-cooled	1/4 HP, air-cooled		1/4 HP, air-cooled	
Refrigerant	Non-CFC, R134A refrigerant	Non-CFC, R134A refrigerant		Non-CFC, R134A refrigerant	
Humidity					
Input Water Quality		50K-1Megohm resistance		50K-1Megohm resistance	
Input Water Volume		1 gallon/hour		1 gallon/hour	
Input Water Pressure		Gravity to 40 psi		Gravity to 40 psi	
RH		Above ambient to 95% @ 37°C (98.6°F) ±5.0% RH		Above ambient to 95% @ 37°C (98.6°F) ±5.0% RH	
Sensor		Capacitive – thin film polymer		Capacitive – thin film 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 qt. (1 liter)		Initial fill approx. 1 qt. (1 liter)	
Setable Alarm		Audible/visual		Audible/visual	
Certification	cULus	cULus	CE	cULus	CE

*Six shelves in 3920 and 3940 (3949), three shelves in 3911 (3913); uniformity is ±0.5°C at all other temperature parameters.

**All models require a drain unless fitted with the optional Condensate Evaporator (No. 1900031). 3940 (3949) and 3911 (3913) also require a constant water source.

Chamber Specifications continued

Thermo Scientific Cat. No.	3920 **	3940 **	3949 **	3911 **	3913**
Description	29 cu. ft. Incubated/Refrigerated Environmental Chamber	29 cu. ft. Incubated/Refrigerated Environmental Chamber with humidity control		11 cu. ft. 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		3/8" FPT & 3/8" O.D. P-trap right rear	
Unit Heat Load					
115V	5500 BTUH (1600 Watts)	5500 BTUH (1600 Watts)		5500 BTUH (1600 Watts)	
220V	6000 BTUH (1750 Watts)	6000 BTUH (1750 Watts)		6000 BTUH (1750 Watts)	
Dimensions					
Exterior					
Width	38.0" (96.5cm)	38.0" (96.5cm)		38.0" (96.5cm)	
Height	88.5" (224.8cm)	88.5" (224.8cm)		51.5" (130.8cm)	
F-B	32.0" (81.3cm)	32.0" (81.3cm)		32.0" (81.3cm)	
Interior					
Width	31.0" (78.7cm)	31.0" (78.7cm)		31.0" (78.7cm)	
Height	60.0" (152.4cm)	60.0" (152.4cm)		24.0" (60.9cm)	
F-B	27.0" (68.6cm)	27.0" (68.6cm)		27.0" (68.6cm)	
Shelves					
Dimensions	30.6"W x 25.8" F-B (77.8cm x 65.6cm)	30.6"W x 25.8" F-B (77.8cm x 65.6cm)		30.6"W x 25.8" F-B (77.8cm x 65.6cm)	
Construction	Solid stainless steel, reinforced	Solid stainless steel, reinforced		Solid stainless steel, reinforced	
Surface Area per Shelf	5.4 sq. ft. (0.5 sq. m)	5.4 sq. ft. (0.5 sq. m)		5.4 sq. ft. (0.5 sq. m)	
Max. Surface Area per Chamber	104.3 sq. ft. (9.7 sq. m)	104.3 sq. ft. (9.7 sq. m)		59.4 sq. ft. (5.5 sq. m)	
Standard/Maximum Number of Shelves	6, 19	6, 19		3, 11	
Load per Shelf	35 lbs. (15.9 kg), slide in/out 50 lbs. (22.7 kg), stationary	35 lbs. (15.9 kg), slide in/out 50 lbs. (22.7 kg), stationary		35 lbs. (15.9 kg), slide in/out 50 lbs. (22.7 kg), stationary	
Construction					
Interior Volume	29.0 cu. ft. (821.2 liters)	29.0 cu. ft. (821.2 liters)		11.0 cu. ft. (311.5 liters)	
Interior Material	Type 304, 2B finish, stainless steel	Type 304, 2B finish, stainless steel		Type 304, 2B finish, stainless steel	
Exterior Material	Cold-rolled steel, powder coated	Cold-rolled steel, powder coated		Cold-rolled steel, powder coated	
Outer Door Gasket	Four-sided, vinyl compression	Four-sided, vinyl compression		Four-sided, vinyl compression	
Electrical					
	120V, 60 Hz, 16.0 Amps 3 Wire (including ground)	208-220V, 60 Hz, 15.0 Amps 4 Wire (including ground) single phase	220-240V,50/60 Hz 14.0 Amps, 3 Wire (including ground) must be hardwired to a lockable fused disconnect switch	208-220V, 60 Hz 15.0 Amps 4 Wire (including ground) single phase	220-240V,50/60 Hz 14.0 Amps, 3 Wire (including ground) must be hardwired to a lockable fused disconnect switch
Dry Contacts	Common, NO, NC	Common, NO, NC		Common, NO, NC	
Data Output	4-20 milliamp, temperature	4-20 milliamp, temperature and RH		4-20 milliamp, temperature and RH	
Power Switch	2 Pole	2 Pole		2 Pole	
Plug	NEMA 5-20P 	NEMA 14-20P 	None	NEMA 14-20P 	None
Weight					
Net	700 lbs. (317.5 kg)	765 lbs. (347.0 kg)		575 lbs. (260.8 kg)	
Shipping (motor)	850 lbs. (385.6 kg)	1,040 lbs. (471.7 kg)	940 lbs. (426.4 kg)	715 lbs. (324.3 kg)	

*All models require a drain unless fitted with the optional Condensate Evaporator (No. 1900031). 3940 (3949) and 3911 (3913) also require a constant water source.

Accessories (All are customer installed unless indicated otherwise)

Thermo Scientific Cat. No	Description
Shelving	
Stainless Steel Shelves for 3920, 3940 (3949), 3911 (3913), and 3960 (3961)	
224139	Solid Stainless Steel Shelf and Channels for 3920, 3940 (3949), 3911 (3913), and 3960 (3961)
224155	Perforated Stainless Steel Shelf and Channels for 3920, 3940 (3949), 3911 (3913), and 3960 (3961)
224161	Reinforced Stainless Steel Shelf and Channels for 3920, 3940 (3949), 3911 (3913), and 3960 (3961); two per unit max., not for shakers; 150 lb. (68.0 kg) load maximum with shelf fully inserted and stationary
Shaker Support System, factory installed	
1900005*	Two shelf shaker support system without duplex outlet, each shelf will hold 200 lbs., for 3920, 3940, (3949) and 3960 (3961). Must be ordered with duplex outlet (505099 or 505094)
190761*	Three shelf shaker support system includes duplex outlet, each shelf will hold 200 lbs., for 3920, 3940, (3949) and 3960 (3961)
Door Options, factory installed	
190239	Lexan® Inner Door Kit (five doors) for 3920, 3940 (3949), and 3960 (3961); factory installed
190514	Door Lock Assembly for 3920, 3940 (3949), and 3960 (3961); factory installed
190597	Left-Hand Door Swing Kit for 3920 and 3940 (3949); factory installed
Stainless Steel Door Glass Covers	
190591	For 3920, 3940 (3949), and 3960 (3961); factory installed
190892	For 3920, 3940 (3949), and 3960 (3961)**
Door Light Package, factory installed	
190032 (220V, 60Hz)	Door light package with 8 fluorescent light bulbs for plant growth, seed germination, algae, small animal and insect studies for 3920, 3940 and (3949); A 24-hour timer enables automated light on/off cycles. Intensity of light can be modified in 4 steps by enabling / disabling from 2 to 8 lights.
1900604 (120V, 60Hz)	
1900605 (220V, 50Hz)	
Reinforced Floor Options	
500182***	Reinforced Floor with Removable Ramp for 3920, 3940 (3949), and 3960 (3961); accommodates a cell roller
190777***	Same as No. 500182 but factory installed
Access Ports, factory installed	
505101	Port for 3920, 3940 (3949), and 3911 (3913); 1.5" (3.8 cm) I.D.; on center right wall
193004	2" nominal ID port with cover
190164	Port for 3960 (3961), 2.4" (6.1 cm) I.D., customer specified location
193005	4" nominal ID port with cover
193006	6" nominal ID port with cover
Convenience Receptacles, factory installed	
505099	120V Duplex (includes separate line cord) for 3920, 3940, and 3911; located on center rear wall
505094	230V (includes separate line cord) for 3949, and 3913; located on center rear wall
Data Outputs (select one) for 3960 (3961), factory installed	
190523	RS-485 interface (compatible with 1535 Monitor/Alarm only)
190512	4-20 milliamp
190543	0-5V
190544	0-1V
Sensaphone Telephone Dialing Systems, interface with standard touch-tone phone	
400047	For up to four input channels
400134	For up to eight input channels

Warranty

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

* Rubber isolators replace casters for maximum stability.

** Must be installed by qualified personnel.

*** Ramp extends approximately 23.0" (58.4cm) in front of the chamber.

****Specification sheets for protocol and field validations are available for review upon request by calling Pre-Sales at 866-984-3766 or emailing: LPG.presales@thermofisher.com.

Thermo Scientific Cat. No	Description
Chart Recorders and Paper	
12", 6 Hour to 31 Day Digital Recorders for 3920, 3940 (3949), and 3911 (3913); draw own chart as they record; single or dual pen; 120V, 50/60 Hz; factory installed	
198036	Left Side
198039	Right Side
198042	Top, adds 20.3" (51.6cm) to cabinet height
197054	Replacement Chart Paper, 100 per box
6", 7 Day Chart Recorders for 3920, 3940 (3949), and 3911 (3913); 0°C to 60°C (32°F to 140°F); 115V, 50/60 Hz	
201144	Single Pen, factory installed 201145 Single Pen 201146 Dual Pen, factory installed
201147	Dual Pen
6", 7 Day Chart Recorders for 3960 (3961), 0°C to 60°C (32°F to 140°F), single pen	
201155	115V, 50/60 Hz
201156	230V, 50/60 Hz
6" Chart Paper for Recorders, 50 per box	
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	
184062	Condensate Pump Kit for 3920, 3940 (3949), and 3911 (3913) Elevated Drains; includes separate line cord, 115V
1900031	Condensate Evaporator for 3920, 3940, and 3911; includes separate line cord; 115V
1900391	Condensate Evaporator for 3949 and 3913; includes separate line cord; 240V
1900139	Heatless Dryer Kit for 3940 (3949) and 3911 (3913), for sub-ambient chamber RH, factory installed; The heatless dryer requires an air supply of 90 psi capable of 10 cfm, at minimum. It is recommended that the air supply be greater than the minimum required by the dryer.
Deionization Cartridge 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
Calibration Certificate and Temperature Mapping with Report	
260045	Temperature Mapping Report (factory installed)
260049	Calibration Certificate (specify test parameters)
cGxP Protocols and on site Validation Services****	
GLP Level Protocols (IQ OQ)	
IQQDOCE89003499	For 3920, 3960
IQQDOCE89003710	For 3940 (3949) 3911 (3913)
GMP Level Protocols (IQ OQ PQ)	
IOPQDOCE89003499	For 3920, 3960
IOPQDOCE89003710	For 3940 (3949) 3911 (3913)
GLP Level Field Validation (IQ OQ) Performed at the customer site (protocol included at no extra charge)	
IOQPCKE89003499	For 3920, 3960
IOQPCKE89003710	For 3940 (3949) 3911 (3913)
GMP Level Field Validation (IQ OQ PQ) Performed at the customer site (protocol included at no extra charge)	
IOPQPCKE89003499	For 3920, 3960
IOPQPCKE89003710	For 3940 (3949) 3911 (3913)
Miscellaneous Accessories Infrared CO2 Control Packages, factory installed	
1900226	For 3920
1900227	For 3940 (3949) and 3911 (3913)
Cell Roll System	
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 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)