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Thermo Scientific cryopreservation storage equipment

Indefinite sample storage. Infinite possibilities.



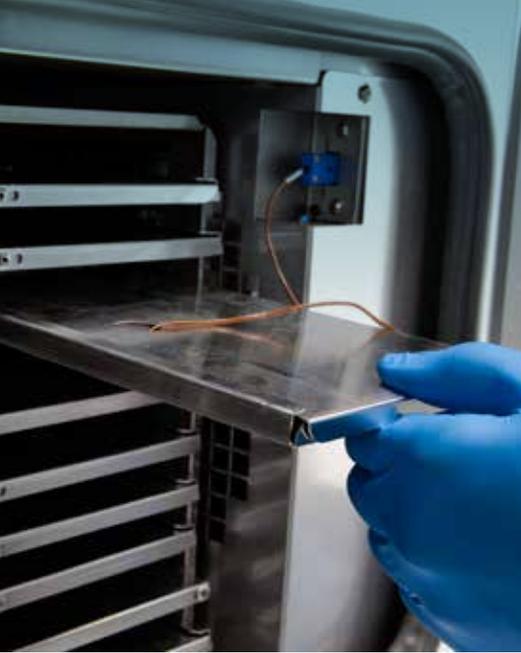
Dependable, secure sample protection

Thermo Scientific™ solutions for cryopreservation sample preparation and storage offer scientists outstanding temperature performance, low operating costs, and integrated control features.

Extended hold times—Unlike mechanical systems, our liquid nitrogen (LN₂) storage solutions are designed to offer consistent temperatures, even when electricity is lost. Samples remain protected much longer during power outages than with alternative technologies. With cryo storage tanks, the need to obtain backup storage and relocate samples is dramatically reduced.

Low power consumption—Because most of our cryogenic storage products rely on liquid nitrogen, they consume less power than a standard light bulb, providing significant energy savings.

Zero greenhouse gases—Because LN₂ storage depends on the cooling power of naturally sourced nitrogen gas, there are no halogenated hydrocarbon refrigerants used and no greenhouse gas concerns.



Sample preparation

Controlled-rate freezers prepare your samples prior to cryogenic storage, ensuring maximum viability.



Sample storage auto-fill LN₂

Storage systems provide the ideal combination of quick sample access, liquid nitrogen storage reliability, microprocessor auto-fill technology, and storage capacity from 6,318 to 39,000 1.2–2.0 mL vials. Large-capacity, high-efficiency storage solutions offer outstanding sample protection and storage capacities up to 93,000 1.2–2.0 mL vials.



Sample storage manual-fill LN₂ dewars

Thermo Scientific™ BioCane™, Thermo Scientific™ Locator™, and Thermo Scientific™ Locator™ Plus systems offer cost-effective storage flexibility and excellent portability with capacities from 180 to 6,000 1.2–2.0 mL vials.

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Dependable sample preparation

CryoMed Controlled-Rate Freezer

Meet your application needs with complete, one-piece Thermo Scientific™ CryoMed™ Controlled-Rate Freezers.

User-friendly operation with enhanced data traceability

- Intuitive touchscreen display allows for easy setup, operation, and review of a freezing run
- Six preset freezing profiles and space for up to 14 user-defined, custom freeze profiles
- Integrated touchscreen UI logs usage and events to support 21 CFR Part 11 requirements
- User security: three levels of user accessibility
- USB data export of .pdf file run logs supports 21 CFR Part 11
- “Run last” feature allows the same profile to be run consecutively with the touch of a button
- PC interface software provides remote operation capabilities, run review, and custom profile creation

Real-time run monitoring for sample protection

- Chamber and sample temperatures are monitored by Type T thermocouples, eliminating lag time and providing real-time responsiveness
- Standard alarms alert users of thermocouple failures, heater malfunction, high/low temperature limits, temperature tracking, power failure, and completion of run
- Remote alarm contacts
- Optional thermal printer

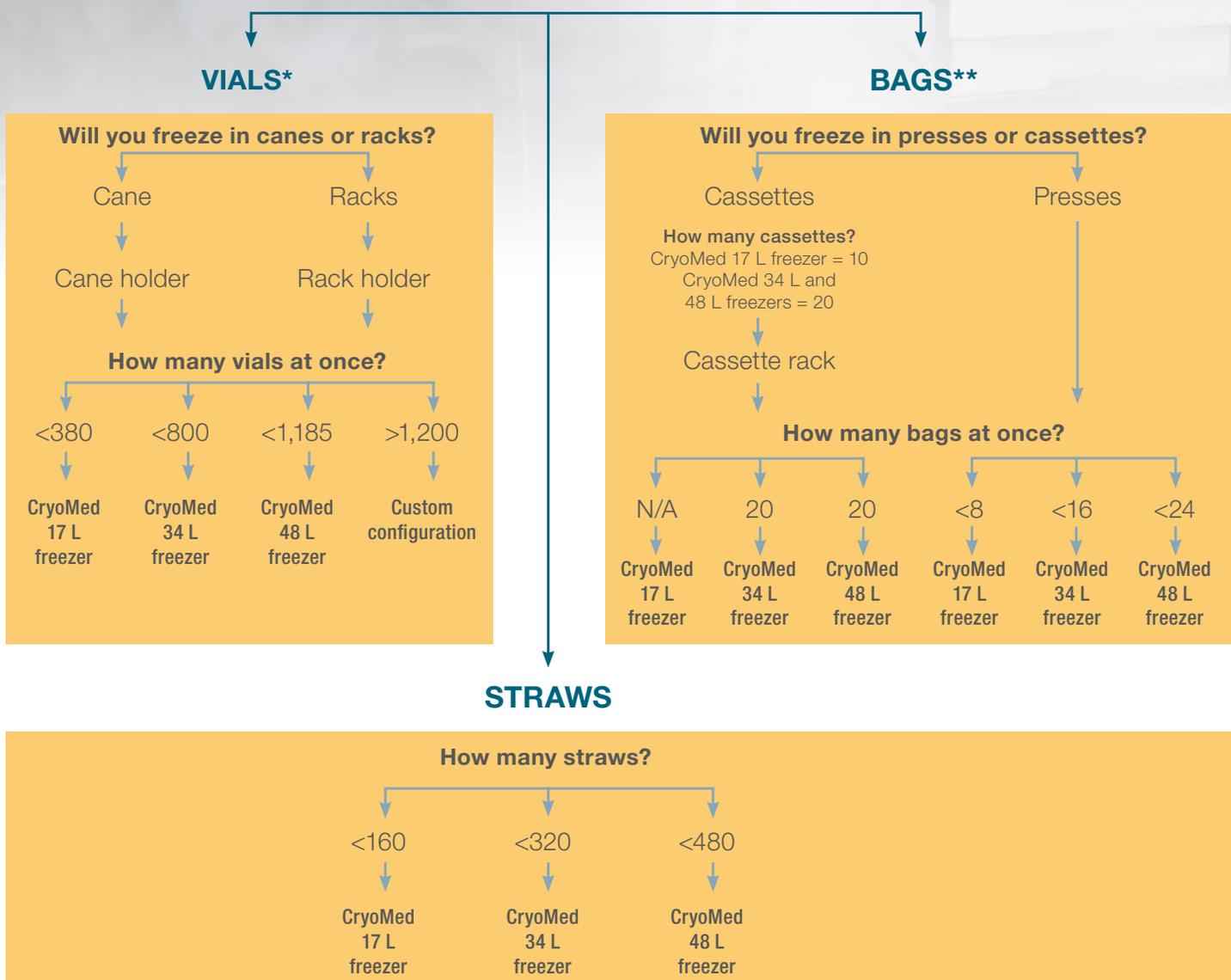
Reliable temperature performance for high-throughput usage

- Dual solenoid valves are designed to balance LN₂ injection volume for precise temperature control and accelerated freezing
- Preventative maintenance indicator for LN₂ solenoid replacement limits downtime
- Consistent temperature control and uniformity achieved via an air-handling system and liquid nitrogen injection ring
- Environmentally friendly insulating foam
- Type 304 stainless steel with exterior powder-coat finish
- Compatible with VHP cleaning techniques

Warranty varies by region. Check with your local representative for more information.



What is your method of sample preparation?



* Assumes 1.2/2.0 mL vials.

** Assumes 250 mL bag.

CryoMed Controlled-Rate Freezers (general purpose)

| Electrical | Plug type | Chamber volume | Printer/ No printer | Temp. range | Exterior dimensions W x H x D in. (cm) | Interior dimensions W x H x D in. (cm) | Product weight lbs (kg) | LN ₂ and utility connection | Cat. No. |
|---------------------|------------|-------------------------|--------------------------|-----------------|--|--|-------------------------|--|----------|
| 120 V/60 Hz | NEMA 5-15P | 17 L (0.6 cu. ft.) | No thermal printer | +50°C to -180°C | 37.3 x 21.7 x 24.3 (94.7 x 55.1 x 61) | 7 x 12 x 13 (17.8 x 30.5 x 33) | 154 lbs. (69.8 kg) | All models require 22 psi (1.5 bar) low pressure supply tank and are supplied with one 6-foot braided stainless steel hose with .5" x 45 degree flare connectors on each end | TSCM17XA |
| 220-230 V/ 50-60Hz | CEE 7/7 | | | | | | | | TSCM17XV |
| 100 V/ 50-60 Hz | NEMA 5-15P | | | | | | | | TSCM17XL |
| 120 V/60 Hz | NEMA 5-15P | 34 L (1.2 cu. ft.) | | | TSCM34XA | | | | |
| 220-230 V/ 50-60 Hz | CEE 7/7 | | | | TSCM34XV | | | | |
| 100 V/ 50-60 Hz | NEMA 5-15P | | | | TSCM34XL | | | | |
| 120 V/60 Hz | NEMA 5-15P | 48.1 L (1.7 cu. ft.) | | | TSCM48XA | | | | |
| 220-230 V/ 50-60 Hz | CEE 7/7 | | | | TSCM48XV | | | | |
| 100 V/ 50-60 Hz | NEMA 5-15P | | | | TSCM48XL | | | | |
| 120 V/60 Hz | NEMA 5-15P | 17 L (0.6 cu. ft.) | Built-in thermal printer | +50°C to -180°C | 37.3 x 21.7 x 24.3 (94.7 x 55.1 x 61) | 7 x 12 x 13 (17.8 x 30.5 x 33) | 155 lbs. (70.3 kg) | TSCM17PA | |
| 220-230 V/ 50-60 Hz | CEE 7/7 | | | | | | | TSCM17PV | |
| 100 V/ 50-60 Hz | NEMA 5-15P | | | | | | | TSCM17PL | |
| 120 V/60 Hz | NEMA 5-15P | | | | 34 L (1.2 cu. ft.) | TSCM34PA | | | |
| 220-230 V/ 50-60 Hz | CEE 7/7 | | | | | TSCM34PV | | | |
| 100 V/ 50-60 Hz | NEMA 5-15P | | | | | TSCM34PL | | | |
| 120 V/60 Hz | NEMA 5-15P | | | | 48.1 L (1.7 cu. ft.) | TSCM48PA | | | |
| 220-230 V/ 50-60 Hz | CEE 7/7 | | | | | TSCM48PV | | | |
| 100 V/ 50-60 Hz | NEMA 5-15P | | | | | TSCM48PL | | | |

CryoMed Controlled-Rate Freezers (medical device)**

| Electrical | Plug type | Chamber volume | Printer/ No printer | Temp. range | Exterior dimensions W x H x D in. (cm) | Interior dimensions W x H x D in. (cm) | Product weight lbs (kg) | LN ₂ and utility connection | Cat. No. |
|---------------------|------------|-------------------------|--------------------------|-----------------|--|--|-------------------------|--|----------|
| 120 V/60 Hz | NEMA 5-15P | 17 L (0.6 cu. ft.) | No thermal printer | +50°C to -180°C | 37.3 x 21.7 x 24.3 (94.7 x 55.1 x 61) | 7 x 12 x 13 (17.8 x 30.5 x 33) | 154 lbs. (69.8 kg) | All models require 22 psi (1.5 bar) low pressure supply tank and are supplied with one 6-foot braided stainless steel hose with .5" x 45 degree flare connectors on each end | TSCM17MA |
| 220-230 V/ 50-60 Hz | CEE 7/7 | | | | | | | | TSCM17MV |
| 100 V/ 50-60 Hz | NEMA 5-15P | | | | | | | | TSCM17ML |
| 120 V/60 Hz | NEMA 5-15P | 34 L (1.2 cu. ft.) | | | TSCM34MA | | | | |
| 220 V/50 Hz | CEE 7/7 | | | | TSCM34MV | | | | |
| 100 V/60 Hz | NEMA 5-15P | | | | TSCM34ML | | | | |
| 120 V/60 Hz | NEMA 5-15P | 48.1 L (1.7 cu. ft.) | | | TSCM48MA | | | | |
| 220 V/50 Hz | CEE 7/7 | | | | TSCM48MV | | | | |
| 100 V/60 Hz | NEMA 5-15P | | | | TSCM48ML | | | | |
| 120 V/60 Hz | NEMA 5-15P | 17 L (0.6 cu. ft.) | Built-in thermal printer | +50°C to -180°C | 37.3 x 21.7 x 24.3 (94.7 x 55.1 x 61) | 7 x 12 x 13 (17.8 x 30.5 x 33) | 155 lbs. (70.3 kg) | TSCM17EA | |
| 220 V/50 Hz | CEE 7/7 | | | | | | | TSCM17EV | |
| 100 V/60 Hz | NEMA 5-15P | | | | | | | TSCM17EL | |
| 120 V/60 Hz | NEMA 5-15P | | | | 34 L (1.2 cu. ft.) | TSCM34EA | | | |
| 220 V/50 Hz | CEE 7/7 | | | | | TSCM34EV | | | |
| 100 V/60 Hz | NEMA 5-15P | | | | | TSCM34EL | | | |
| 120 V/60 Hz | NEMA 5-15P | | | | 48.1 L (1.7 cu. ft.) | TSCM48EA | | | |
| 220 V/50 Hz | CEE 7/7 | | | | | TSCM48EV | | | |
| 100 V/60 Hz | NEMA 5-15P | | | | | TSCM48EL | | | |

** FDA listed Class II medical device, 510K exempt.

CryoMed freezing racks and holders

| Cat. No. and description | | Dimensions H x W x D in. (cm) | Storage | CryoMed freezer 17 L | CryoMed freezer 34 L | CryoMed freezer 48 L | CryoMed freezer for IVF 17 L | CryoMed freezer for IVF 34 L |
|--|--|--|--------------------------|----------------------------|----------------------------|----------------------------|------------------------------------|------------------------------------|
|  | 4000294 | 11.3 x 3 x 5.25 (28.7 x 7.6 x 13.3) | Racks per chamber | 4 | 8 | 12 | 4* | 8* |
| | Straw rack for .25/.5 mL straws—holds 40 straws | | Straws per rack | 40 | 40 | 40 | 40 | 40 |
| | Total # straws per chamber | | 160 | 320 | 480 | 160* | 320* | |
|  | 4000303 | 11 x 12 x 12 (28 x 30.5 x 30.5) | Racks per chamber | N/A | 1 | 1 large and 1 small | N/A | 1* |
| | Cane freezing rack—large | | Canes per rack | N/A | 162 | 162 and 77 | N/A | 162* |
| | Vials (2 mL) per cane | | N/A | 5 | 5 | N/A | 5* | |
| | Total # vials per chamber | | N/A | 810 | 1,195 | N/A | 810* | |
|  | 4000700 | 11 x 6 x 12 (28 x 15.2 x 30.5) | Racks per chamber | 1 | N/A | 1 large and 1 small | 1* | N/A |
| | Cane freezing rack—small | | Canes per rack | 77 | N/A | 162 and 77 | 77* | N/A |
| | Vials (2 mL) per cane | | 5 | N/A | 5 | 5* | N/A | |
| | Total # vials per chamber | | 385 | N/A | 1,195 | 385* | N/A | |
|  | 4000701 | 1.1 x 6 x 12 (2.8 x 15.2 x 30.5) | Racks per chamber | 5 | N/A | 5 large and 5 small | 5* | N/A |
| | 1.2/2 mL freezing rack—small (order qty 5 each when ordering with 4000702 rack holder) | | Vials per rack | 76 | N/A | 161 and 76 | 76* | N/A |
| | Total # vials per chamber | | 380 | N/A | 1,185 | 380* | N/A | |
|  | 4000702 | 9.8 x 6.2 x 12.4 (24.9 x 15.7 x 31.5) | Rack holders per chamber | 1 | N/A | 1 large and 1 small | 1* | N/A |
| | Small rack holder for 4000701 racks | | Racks per rack holder | 5 | N/A | 5 and 5 | 5* | N/A |
| | Total # racks per chamber | | 5 | N/A | 10 | 5* | N/A | |
|  | 4000703 | 1.1 x 12 x 12 (2.8 x 30.5 x 30.5) | Racks per chamber | N/A | 5 | 5 large and 5 small | N/A | 5* |
| | 1.2/2 mL freezing rack—large (order qty 5 each when ordering with 4000704 rack holder) | | Vials per rack | N/A | 161 | 161 and 76 | N/A | 161* |
| | Total # vials per chamber | | N/A | 805 | 1,185 | N/A | 805* | |

* These accessories can only be used when top loading cane, vial, and straw holders are not in use.

CryoMed freezing racks and holders

| Cat. No. and description | | Dimensions H x W x D in. (cm) | Storage | CryoMed freezer 17 L | CryoMed freezer 34 L | CryoMed freezer 48 L | CryoMed freezer for IVF 17 L | CryoMed freezer for IVF 34 L |
|--|---|---|--------------------------|----------------------------|----------------------------|----------------------------|------------------------------------|------------------------------------|
|  | 4000704 | 9.8 x 12.2 x 12.4 (24.9 x 31 x 31.5) | Rack holders per chamber | N/A | 1 | 1 large and 1 small | N/A | 1* |
| | Large rack holder for 4000703 racks | | Racks per rack holder | N/A | 5 | 5 and 5 | N/A | 5* |
| | Total # racks per chamber | | N/A | 5 | 10 | N/A | 5* | |
|  | 4000705 | 2.6 x 6 x 12 (6.6 x 15.2 x 30.5) | Racks per chamber | 3 | N/A | 3 large and 3 small | 3* | N/A |
| | 4 or 5 mL freezing rack—small (order qty 3 each when ordering with 4000706 rack holder) | | Viials per rack | 76 | N/A | 161 and 76 | 76* | N/A |
| | Total # viials per chamber | | 228 | N/A | 711 | 228* | N/A | |
|  | 4000706 | 8.1 x 6.2 x 12.4 (20.6 x 15.7 x 31.5) | Rack holders per chamber | 1 | N/A | 1 large and 1 small | 1* | N/A |
| | Small rack holder for 4000705 racks | | Racks per rack holder | 3 | N/A | 3 and 3 | 3* | N/A |
| | Total # racks per chamber | | 3 | N/A | 6 | 3* | N/A | |
|  | 4000707 | 8.1 x 12.2 x 12.4 (20.6 x 31 x 31.5) | Racks per chamber | N/A | 3 | 3 large and 3 small | N/A | 3* |
| | 4 or 5 mL freezing rack—large (order qty 3 each when ordering with 4000708 rack holder) | | Viials per rack | N/A | 161 | 161 and 76 | N/A | 161* |
| | Total # viials per chamber | | N/A | 483 | 711 | N/A | 483* | |
|  | 4000708 | 8.1 x 12.2 x 12.4 (20.6 x 31 x 31.5) | Rack holders per chamber | N/A | 1 | 1 large and 1 small | N/A | 1* |
| | Large rack holder for 4000707 racks | | Racks per rack holder | N/A | 3 | 3 and 3 | N/A | 3* |
| | Total # racks per chamber | | N/A | 3 | 6 | N/A | 3* | |
|  | 4000310 | 10.5 x 6.2 x 12.6 (26.7 x 15.7 x 32) | Rack holders per chamber | 1 | 2 | 3 | 1* | 2* |
| | Two level skin rack; holds skin packets measuring 5 x 7 in. | | Skin packets per rack | 48 | 48 | 48 | 48 | 48 |
| | Total # skin packets per chamber | | 48 | 96 | 144 | 48* | 96* | |
|  | 4000312 | 5.2 x 6.2 x 12.6 (13.2 x 15.7 x 32) | Rack holders per chamber | 2 | 4 | 6 | 2* | 4* |
| | One level skin rack; holds skin packets measuring 5 x 7 in. | | Skin packets per rack | 24 | 24 | 24 | 24 | 24 |
| | Total # skin packets per chamber | | 48 | 96 | 144 | 48* | 96* | |
|  | 4000340 | 11 x 4 x 5 (28 x 10.2 x 12.7) | Rack holders per chamber | 3 | 6 | 9 | 3* | 6* |
| | Cord blood freezing rack for 50 mL canisters (4000610) | | Canisters per rack | 10 | 10 | 10 | 10 | 10 |
| | Total # canisters per chamber | | 30 | 60 | 90 | 30* | 60* | |
|  | 4000340 | 11 x 4 x 5 (28 x 10.2 x 12.7) | Rack holders per chamber | 3 | 6 | 9 | 3* | 6* |
| | Cord blood freezing rack for 25 mL canisters (1950831) | | Canisters per rack | 10 | 10 | 10 | 10 | 10 |
| | Total # canisters per chamber | | 30 | 60 | 90 | 30* | 60* | |
|  | 185089 | 11.6 x 5.5 to 7.5 x 8.2 (29.5 x 14 to 19 x 20.8) | Rack holders per chamber | N/A | 2 | 2 | N/A | 2* |
| | Adjustable freezing rack for canisters | | Canisters per rack | N/A | 10 | 10 | N/A | 10* |
| | Total # canisters per chamber | | N/A | 20 | 20 | N/A | 20* | |

* These accessories can only be used when top loading cane, vial, and straw holders are not in use.

CryoMed freezing presses

| Cat. No. and description | | Dimensions H x W x D in. (cm) | Storage | CryoMed freezer 17 L | CryoMed freezer 34 L | CryoMed freezer 48 L | CryoMed freezer for IVF 17 L | CryoMed freezer for IVF 34 L |
|---|--|----------------------------------|---------------------|----------------------------|----------------------------|----------------------------|------------------------------------|------------------------------------|
|  | 4000314 | 5.9 x 9 (15 x 22.9) | Presses per chamber | 4 | 8 | 12 | 4* | 8* |
| | Bag press for 250 mL bag (Fenwal™ 4R5461 or OriGen CryoSure™ 250) | | Bags per rack | 2 | 2 | 2 | 2 | 2 |
| | Total # - bags per chamber | | 8 | 16 | 24 | 8* | 16* | |
|  | 4000316 | 8 x 8.5 (20.3 x 21.6) | Presses per chamber | N/A | 4 | 8 | N/A | 4* |
| | Bag press for 200 mL bag (Gambro™ DF- 200 or CryoMacs™ 50 and 250) | | Bags per rack | N/A | 2 | 2 | N/A | 2* |
| | Total # - bags per chamber | | N/A | 8 | 16 | N/A | 8* | |
|  | 4000317 | 8.8 x 12 (22.4 x 30.5) | Presses per chamber | N/A | 4 | 8 | N/A | 4* |
| | Bag press for Delmed™ 2030-2 | | Bags per rack | N/A | 4 | 4 | N/A | 4* |
| | Total # - bags per chamber | | N/A | 16 | 32 | N/A | 16* | |
|  | 4000318 | 9 x 12 (22.9 x 30.5) | Presses per chamber | N/A | 4 | 8 | N/A | 4* |
| | Bag press for 250 mL bag (Fenwal 4R5461 or OriGen CryoSure 250) | | Bags per rack | N/A | 4 | 4 | N/A | 4* |
| | Total # - bags per chamber | | N/A | 16 | 32 | N/A | 16* | |
|  | 4000320 | 9 x 12 (22.9 x 30.5) | Presses per chamber | N/A | 4 | 8 | N/A | 4* |
| | Bag press for 200 mL bag (Gambro DF-200 or equivalent) | | Bags per rack | N/A | 4 | 4 | N/A | 4* |
| | Total # - bags per chamber | | N/A | 16 | 32 | N/A | 16* | |
|  | 4000321 | 8 x 12 (20.3 x 30.5) | Presses per chamber | N/A | 4 | 8 | N/A | 4* |
| | Bag press for 700 mL bag (Gambro DF-700 or equivalent) | | Bags per rack | N/A | 2 | 2 | N/A | 2* |
| | Total # - bags per chamber | | N/A | 8 | 16 | N/A | 8* | |
|  | 4000555 | 6 x 10.3 (15.2 x 26.2) | Presses per chamber | 4 | 8 | 12 | 4* | 8* |
| | Bag press for 500 mL bag (Fenwal 4R5462 or CryoMacs™ 500 and 750) | | Bags per rack | 2 | 2 | 2 | 2 | 2 |
| | Total # - bags per chamber | | 8 | 16 | 24 | 4* | 16* | |

CryoMed sample sensors*

| Cat. No. and description | | CryoMed freezer 17 L | CryoMed freezer 34 L | CryoMed freezer 48 L |
|---|---|-------------------------|-------------------------|-------------------------|
|  | Thermocouple sensor for 1.2/2 mL vials | | 4000385 | |
| | Thermocouple sensor for 4/5 mL vials | | 4000386 | |
| | Thermocouple sensor ribbon type for bags | | 4000393 | |
| | Thermocouple sensor .02 sheath for straws | | 4000384 | |

* NOTE: Front load CryoMed sensor includes a 2 mL sample sensor (Cat. No. 4000385). The IVF chamber includes a vial sensor (Cat. No. 4000403) and a straw sensor (Cat. No. 4000402).

CryoMed canisters for freezing racks

| Cat. No. and description | | Dimensions H x W x D in. (cm) |
|--|---|------------------------------------|
|  | 1950831 (Pall MEDSEPTM 25 mL, OriGen CS 25, or equivalent) | 3.6 x 3.9 x 0.4 (9.14 x 9.4 x 1) |
| | 4000610 (Fenwal 4R9951, OriGen CS 50 or equivalent) | 3.7 x 6.3 x 0.5 (9.4 x 16 x 1.3) |
| | 4000356 (Gambro DF-200 or CryoMACS 50 and 250) | 6.4 x 7.8 x 0.8 (16.3 x 19.1 x 2) |
|  | 4000357 (Gambro DF-700, OriGen CS 1000 or CryoMACS 750 and 1000) | 6.5 x 12.1 x 0.8 (16.5 x 30.7 x 2) |
| | 4000335 (Fenwal 4R5461, OriGen CS 25 or CryoMACS 50 and 250) | 5.5 x 7.6 x 0.4 (14 x 19.3 x 1) |
| | 4000336 (Fenwal 4R5462, OriGen CS 500 or equivalent) | 5.6 x 9.2 x 0.4 (14.2 x 23.4 x 1) |
| | 4000332 (Gambro DF-200 or equivalent) | 6.4 x 7.8 x 0.8 (16.3 x 19.1 x 2) |
| | 4000333 (Gambro DF-700, OriGen CS 1000 or CryoMACS 750 and 1000) | 6.5 x 11.8 x 0.8 (16.5 x 30 x 2) |

Printer paper

| Cat. No. and description | |
|--------------------------|--|
| 4000566 | Thermal printer paper (5 rolls per pack) |

Quality services available (Must be ordered with equipment)

| | |
|---------------|---|
| 260049 | Certification of Compliance (Unit Specific) |
| 260045 | Temperature Mapping |
| 260043 | Certificate of Conformance |

LN₂ cryo storage selector guide

VAPOR OR LIQUID PHASE STORAGE?

VAPOR PHASE

Low LN₂ consumption
Vial storage 20–94k

Full sample access



| | |
|-------------------------|----------------------------|
| 19,500 vials / 500 BB | CryoExtra 20 system |
| 40,600 vials / 1,020 BB | CryoExtra 40 system |
| 80,600 vials / 1,860 BB | CryoExtra 80 system |
| 93,000 vials / 1,860 BB | CryoExtra 94 system |

| | |
|-----------------------|--------------------------|
| 5,346 vials / 112 BB | CryoPlus 1 system |
| 11,000 vials / 256 BB | CryoPlus 2 system |
| 18,700 vials / 448 BB | CryoPlus 3 system |
| 31,900 vials / 696 BB | CryoPlus 4 system |

LIQUID PHASE

Cryovials*

Blood bags**

| | | | |
|--------|--|-----------------|--------------------------|
| ≥6,000 | | 6,318 / 112 BB | CryoPlus 1 system |
| | | 13,000 / 256 BB | CryoPlus 2 system |
| ≤6,000 | | 22,100 / 448 BB | CryoPlus 3 system |
| | | 37,700 / 696 BB | CryoPlus 4 system |

Cane or box storage?

| | | | |
|---------------|--|-------------------------|---------------------------|
| Cane or straw | | ≤2k vials/ 3,360 straws | BioCane 73 system |
| | | ≤1.5k vials/ 2,500 | BioCane 47 system |
| Box | | 4–6k | Locator 6+ system |
| | | 2–4k | Locator 4+ system |
| Cane or straw | | ≤2k (100 cell box) | Locator Jr+ system |
| | | ≤2k (25 cell box) | Locator 8+ system |
| Cane or straw | | ≤700vials/ 1,200 straws | BioCane 34 system |
| | | ≤120 vials/ 300 straws | BioCane 20 system |

* Based on 2.0 mL vial.

** Based on 250 mL blood bag.

Reliable long-term storage solution

CryoPlus sample storage systems

Thermo Scientific™ CryoPlus™ systems provide the perfect combination of liquid nitrogen storage reliability and microprocessor technology. Storage capacities of up to 39,000 2.0 mL vials (8,450 to 65,910 Thermo Scientific™ Nunc™ Cryobank™ vials) make the most of your laboratory storage space.



Storage system features

- Top-mounted control panel allows easy access to the unit's microprocessor controller for programming
- All lids incorporate proprietary foamed-in-place, high-density urethane insulation with dedicated vent; two independent, flexible gaskets reduce the migration of moisture into the chamber and reduce icing
- 24 tricolor LEDs continuously display actual liquid nitrogen level and high-level/low-level setpoints
- Remote alarm contacts for in-house remote alarms or connection to a Thermo Scientific™ Sensaphone™ Telephone Dialing System
- Counterbalanced UL 61010 third edition-compliant lid with 100% clearance allows each entry into the storage area for retrieval of samples, while minimizing sample exposure time and maintaining a safe work environment
- Heavy-duty casters are provided standard
- Incorporates a temperature sleeve as a standard feature, which provides colder temperatures at the top and more efficient operation in vapor phase
- Storage tanks are vacuum-insulated, with stainless steel interior
- Exterior cabinet is constructed of 18-gauge, cold roll steel with powder-coat paint for durability and a high-quality uniform finish; salt spray tests exceed 1,000 hours per ASTM Standard 117B-85
- All models come standard with LN₂ transfer hose

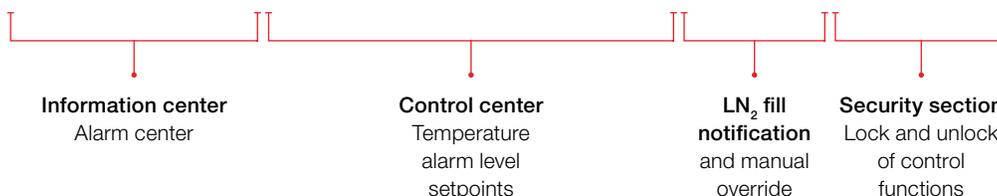
For maximum product security, CryoPlus systems incorporate three different solutions

- A convenient front-mounted cabinet key lock for sample security
- A keyed lock on the microprocessor for temperature and alarm setpoint security
- A rear-mounted, recessed power switch to prevent accidental power shut-off

A complete sample storage offering for vapor or liquid phase

- Square and vertical racks for vial storage
- Frames and canisters for bag storage
- Specialty racks for cane storage
- Gas bypass assembly delivers warm nitrogen to atmosphere until the control probe reaches set temperature. The bypass valve closes and the fill valve is energized, preventing the storage area from being subjected to warm nitrogen gas. This is also required if the CryoPlus unit is connected to a manifold system to prevent LN₂ source alarms.

CryoPlus system information panel



CryoPlus sample storage systems

| Model | Cat. No. | LN ₂ capacity (liters) | Vial capacity 1.2–2.0 mL (CryoBank) | Electrical | Plug type | Inner tank diameter in. (cm) | Exterior dimensions H x W x D in. (cm) | Shipping weight | Regulatory listings | LN ₂ and utility connection |
|-------------------|----------|-----------------------------------|---|----------------|------------|------------------------------|--|-----------------|--------------------------|---|
| CryoPlus 1 system | 7400 | 90 | 6,318 ¹ (8,450 ^{2,3}) | 115v/60 Hz | NEMA 5-15P | 16 | 41 x 21.5 x 26 (104.1 x 54.6 x 66) | 260 lbs/ | CFDA, cULus and CE | All models require 22 psi low pressure supply tank and are supplied with (1) 0.5 in. 45° flare stainless steel flexible transfer hose |
| | 7401 | | | 208-230v/50 Hz | CEE 7/7 | (40.6) | | 117.9kg | | |
| CryoPlus 2 system | 7402 | 200 | 13,500 ² (22,815 ^{2,3}) | 115v/60 Hz | NEMA 5-15P | 24 | 41 x 28.5 x 34 (104.1 x 72.4 x 86.4) | 480 lbs/ | | |
| | 7403 | | | 208-230v/50 Hz | CEE 7/7 | (61) | | 217.7 kg | | |
| CryoPlus 3 system | 7404 | 340 | 23,000 ² (38,870 ^{2,3}) | 115v/60 Hz | NEMA 5-15P | 31 | 41 x 34.5 x 41.5 (104.1 x 87.6 x 105.4) | 550 lbs/ | | |
| | 7405 | | | 208-230v/50 Hz | CEE 7/7 | (78.7) | | 249 kg | | |
| CryoPlus 4 system | 7406 | 552 | 39,000 ² (65,910 ^{2,3}) | 115v/60 Hz | NEMA 5-15P | 39.5 | 47 x 43.5 x 50 (119.4 x 110.5 x 127) | 1070 lbs/ | | |
| | 7407 | | | 208-230v/50 Hz | CEE 7/7 | (110.3) | | 484.3 kg | | |

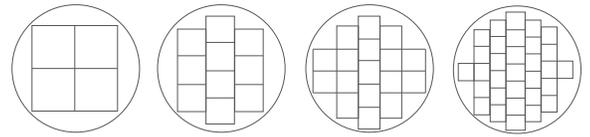
1 Using arrowhead racks no. 4000044.

2 Using vertical racks no. 4000012 and dense storage tube boxes.

3 Using Thermo Scientific™ Nunc™ Cryobank™ dense storage boxes (196-cell) and 1 mL Cryobank tubes.

Thermo Scientific™ CryoPlus™ vapor phase starter kits

| Model | Cat. No. | LN ₂ capacity (liters) | Electrical | Description |
|------------------------------------|--------------|-----------------------------------|--------------|--|
| CryoPlus 1 Vapor Phase Starter Kit | 7400RAKHGGBR | 90 | 120V 50/60Hz | Package includes CryoPlus 1 (model 7400) and a hot gas bypass option, 4 storage rack (rack 4000001), and a 3.5" riser, UL |
| | 7401RAKHGGBR | | 230V 50/60Hz | Package includes CryoPlus 1 (model 7401) and a hot gas bypass option, 4 storage rack (rack 4000001), and a 3.5" riser, CE |
| CryoPlus 2 Vapor Phase Starter Kit | 7402RAKHGGBR | 200 | 120V 50/60Hz | Package includes CryoPlus 2 (model 7402) and a hot gas bypass option, 10 storage rack (rack 4000001), and a 3.5" riser, UL |
| | 7403RAKHGGBR | | 230V 50/60Hz | Package includes CryoPlus 2 (model 7403) and a hot gas bypass option, 10 storage rack (rack 4000001), and a 3.5" riser, CE |
| CryoPlus 3 Vapor Phase Starter Kit | 7404RAKHGGBR | 340 | 120V 50/60Hz | Package includes CryoPlus 3 (model 7404) and a hot gas bypass option, 17 storage rack (rack 4000001), and a 3.5" riser, UL |
| | 7405RAKHGGBR | | 230V 50/60Hz | Package includes CryoPlus 3 (model 7405) and a hot gas bypass option, 17 storage rack (rack 4000001), and a 3.5" riser, CE |
| CryoPlus 4 Vapor Phase Starter Kit | 7406RAKHGGBR | 552 | 120V 50/60Hz | Package includes CryoPlus 4 (model 7406) and a hot gas bypass option, 29 storage rack (rack 4000001), and a 3.5" riser, UL |
| | 7407RAKHGGBR | | 230V 50/60Hz | Package includes CryoPlus 4 (model 7407) and a hot gas bypass option, 29 storage rack (rack 4000001), and a 3.5" riser, CE |



CryoPlus rack selection guide

| Cat. No. and description | | Dimensions H x W x D in. (cm) | Storage | CryoPlus 1 system | CryoPlus 2 system | CryoPlus 3 system | CryoPlus 4 system |
|--|---|---|------------------|----------------------|----------------------|----------------------|----------------------|
| Square racks for liquid phase storage | | | | | | | |
| | 4000006* | 27.4 x 5.5 x 5.63 (69.6 x 14 x 14.3) | Racks per vessel | 4 | 10 | 17 | 29 |
| | Rack includes cardboard boxes and cardboard dividers for 1.5/2 mL vials | | Boxes per rack | 13 | 13 | 13 | 13 |
| | Vials per box | | 100 | 100 | 100 | 100 | |
| | Vials per vessel | | 5,200 | 13,000 | 22,100 | 37,700 | |
| | 4000007 | 27.4 x 5.5 x 5.63 (69.6 x 14 x 14.3) | Racks per vessel | 4 | 10 | 17 | 29 |
| | Rack includes stainless steel boxes and cardboard dividers for 1.5/2 mL vials | | Boxes per rack | 13 | 13 | 13 | 13 |
| | Vials per box | | 100 | 100 | 100 | 100 | |
| | Vials per vessel | | 5,200 | 13,000 | 22,100 | 37,700 | |
| | 4000042 | 26 x 5.5 x 5.63 (66 x 14 x 14.3) | Racks per vessel | 4 | 10 | 17 | 29 |
| | Rack includes cardboard boxes and cardboard dividers for 1.5/2 mL vials | | Boxes per rack | 12 | 12 | 12 | 12 |
| | Vials per box | | 100 | 100 | 100 | 100 | |
| | Vials per vessel | | 4,800 | 12,000 | 20,400 | 34,800 | |
| | 4000008 | 25.4 x 5.5 x 5.63 (64.5 x 14 x 14.3) | Racks per vessel | 4 | 10 | 17 | 29 |
| | Rack includes cardboard boxes and cardboard dividers for 4 mL vials | | Boxes per rack | 8 | 8 | 8 | 8 |
| | Vials per box | | 100 | 100 | 100 | 100 | |
| | Vials per vessel | | 3,200 | 8,000 | 13,600 | 23,200 | |
| | 4000009 | 25.4 x 5.5 x 5.63 (64.5 x 14 x 14.3) | Racks per vessel | 4 | 10 | 17 | 29 |
| | Rack includes stainless steel boxes and cardboard dividers for 4 mL vials | | Boxes per rack | 8 | 8 | 8 | 8 |
| | Vials per box | | 100 | 100 | 100 | 100 | |
| | Vials per vessel | | 3,200 | 8,000 | 13,600 | 23,200 | |
| | 4000010 | 26.6 x 5.5 x 5.63 (67.6 x 14 x 14.3) | Racks per vessel | 4 | 10 | 17 | 29 |
| | Rack includes cardboard boxes and cardboard dividers for 5 mL vials | | Boxes per rack | 7 | 7 | 7 | 7 |
| | Vials per box | | 100 | 100 | 100 | 100 | |
| | Vials per vessel | | 2,800 | 7,000 | 11,900 | 20,300 | |

* Rack no. 4000006 will not accommodate polycarbonate boxes; use rack no. 4000042 instead.

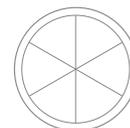
CryoPlus rack selection

| Cat. No. and description | | Dimensions H x W x D in. (cm) | Storage | CryoPlus 1 system | CryoPlus 2 system | CryoPlus 3 system | CryoPlus 4 system |
|---|---|---|--------------------|----------------------|----------------------|----------------------|----------------------|
| Square racks for vapor phase storage | | | | | | | |
|  | 4000001 | 23.9 x 5.5 x 5.63 (60.7 x 14 x 14.3) | Racks per vessel | 4 | 10 | 17 | 29 |
| | Rack includes cardboard boxes and cardboard dividers for 1.5/2 mL vials | | Boxes per rack | 11 | 11 | 11 | 11 |
| | | | Vials per box | 100 | 100 | 100 | 100 |
| | | | Vials per vessel | 4,400 | 11,000 | 18,700 | 31,900 |
|  | 4000002 | 23.9 x 5.5 x 5.63 (60.7 x 14 x 14.3) | Racks per vessel | 4 | 10 | 17 | 29 |
| | Rack includes stainless steel boxes for 1.5/2 mL vials | | Boxes per rack | 11 | 11 | 11 | 11 |
| | | | Vials per box | 100 | 100 | 100 | 100 |
| | | | Vials per vessel | 4,400 | 11,000 | 18,700 | 31,900 |
|  | 4000003 | 22.3 x 5.5 x 5.63 (56.6 x 14 x 14.3) | Racks per vessel | 4 | 10 | 17 | 29 |
| | Rack includes cardboard boxes and cardboard dividers for 4 mL vials | | Boxes per rack | 7 | 7 | 7 | 7 |
| | | | Vials per box | 100 | 100 | 100 | 100 |
| | | | Vials per vessel | 2,800 | 7,000 | 11,900 | 20,300 |
|  | 4000004 | 22.3 x 5.5 x 5.63 (56.6 x 14 x 14.3) | Racks per vessel | 4 | 10 | 17 | 29 |
| | Rack includes stainless steel boxes and cardboard dividers for 4 mL vials | | Boxes per rack | 7 | 7 | 7 | 7 |
| | | | Vials per box | 100 | 100 | 100 | 100 |
| | | | Vials per vessel | 2,800 | 7,000 | 11,900 | 20,300 |
|  | 4000005 | 22.8 x 5.5 x 5.63 (57.9 x 14 x 14.3) | Racks per vessel | 4 | 10 | 17 | 29 |
| | Rack includes cardboard boxes and cardboard dividers for 5 mL vials | | Boxes per rack | 6 | 6 | 6 | 6 |
| | | | Vials per box | 100 | 100 | 100 | 100 |
| | | | Vials per vessel | 2,400 | 6,000 | 10,200 | 17,400 |
| Specialty racks | | | | | | | |
|  | 4000379 | 23.9 x 5.5 x 5.63 (60.7 x 14 x 14.3) | Racks per vessel | 4 | 10 | 17 | 29 |
| | SUC-1 rack for cane storage (includes canisters #4000176) | | Canisters per rack | 8 | 8 | 8 | 8 |
| | | | Canes per canister | 25 | 25 | 25 | 25 |
| | | | Canes per vessel | 800 | 2,000 | 3,400 | 5,800 |
| Platform risers required for racks in vapor phase storage | | | | | | | |
|  | 3.5" riser for use with 4000001, 4000002, and 4000379 racks | | | 4000060 | 4000060 | 4000063 | 4000066 |
| | 4" riser for use with 4000005 racks | | | 4000056 | 4000062 | 4000065 | 4000068 |
| | 5" riser for use with 4000003 and 4000004 racks | | | 4000061 | 4000061 | 4000064 | 4000067 |



Arrowhead racks for liquid phase storage

| Cat. No. and description | | Dimensions H x W x D in. (cm) | Storage | CryoPlus 1 system |
|---|---|--|------------------|----------------------|
|  | 4000044 | 28.1 x 7.8 x 7.5 (71.4 x 19.8 x 19.1) | Racks per vessel | 6 |
| | Rack includes cardboard boxes and cardboard dividers for 1.5/2 mL vials | | Boxes per rack | 13 |
| | | | Vials per box | 81 |
| | | | Vials per vessel | 6,318 |
|  | 4000112 | 26 x 7.8 x 7.5 (66 x 19.8 x 19.1) | Racks per vessel | 6 |
| | Rack includes cardboard boxes and cardboard dividers for 1.5/2 mL vials | | Boxes per rack | 12 |
| | | | Vials per box | 81 |
| | | | Vials per vessel | 5,832 |
|  | 4000113 | 26 x 7.8 x 7.5 (66 x 19.8 x 19.1) | Racks per vessel | 6 |
| | Rack includes stainless steel boxes and cardboard dividers for 1.5/2 mL vials | | Boxes per rack | 12 |
| | | | Vials per box | 81 |
| | | | Vials per vessel | 5,832 |
|  | 4000104 | 25.4 x 7.8 x 7.5 (64.5x 19.8 x 19.1) | Racks per vessel | 6 |
| | Rack includes cardboard boxes and cardboard dividers for 4 mL vials | | Boxes per rack | 8 |
| | | | Vials per box | 81 |
| | | | Vials per vessel | 3,888 |
|  | 4000105 | 25.4 x 7.8 x 7.5 (64.5x 19.8 x 19.1) | Racks per vessel | 6 |
| | Rack includes stainless steel boxes and cardboard dividers for 4 mL vials | | Boxes per rack | 8 |
| | | | Vials per box | 81 |
| | | | Vials per vessel | 3,888 |
|  | 4000043 | 26.5 x 7.8 x 7.5 (67.3 x 19.8 x 19) | Racks per vessel | 6 |
| | Rack includes cardboard boxes and cardboard dividers for 5 mL vials | | Boxes per rack | 7 |
| | | | Vials per box | 81 |
| | | | Vials per vessel | 3,402 |



Arrowhead racks for vapor phase storage

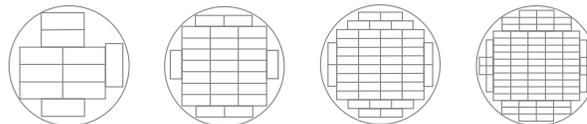
| Cat. No. and description | | Dimensions H x W x D in. (cm) | Storage | CryoPlus 1 system |
|---|---|--|------------------|----------------------|
|  | 4000110 | 23.8 x 7.8 x 7.5 (60.5 x 19.8 x 19.1) | Racks per vessel | 6 |
| | Rack includes cardboard boxes and cardboard dividers for 1.5/2 mL vials | | Boxes per rack | 11 |
| | | | Vials per box | 81 |
| | | | Vials per vessel | 5,346 |
|  | 4000111 | 23.8 x 7.8 x 7.5 (60.5 x 19.8 x 19.1) | Racks per vessel | 6 |
| | Rack includes stainless steel boxes and cardboard dividers for 1.5/2 mL vials | | Boxes per rack | 11 |
| | | | Vials per box | 81 |
| | | | Vials per vessel | 5,346 |
|  | 4000108 | 21.6 x 7.8 x 7.5 (54.9 x 19.8 x 19.1) | Racks per vessel | 6 |
| | Rack includes cardboard boxes and cardboard dividers for 2 mL vials | | Boxes per rack | 10 |
| | | | Vials per box | 81 |
| | | | Vials per vessel | 4,860 |

Platform risers required for racks in vapor phase storage

| | Description of riser and racks for intended use | CryoPlus 1 system |
|---|--|----------------------|
|  | 3.5 in. riser for use with 4000110 and 4000111 racks | 4000060 |
| | 5 in. riser for use with 4000108 racks | 4000061 |

Arrowhead boxes and dividers for vapor phase storage

| | Cat. No. | Description |
|---|--|--|
|  | Boxes | |
| | 4000193 | Arrowhead cardboard box (with drain hole) includes 81-cell divider for use with 1.5/2 mL vials |
| | 4000194 | Arrowhead stainless steel box (with drain hole) does not include 81-cell divider for use with 1.5/2 mL vials |
| | 4000195 | Arrowhead cardboard box (with drain hole) includes 81-cell divider for use with 4/5 mL vials |
| | 4000196 | Arrowhead stainless steel box (with drain hole) does not include 81-cell divider for use with 4 mL vials |
| | Cell dividers | |
| 4000181 | 81-cell divider for use with all arrowhead boxes | |



Vertical racks for liquid phase storage

| Cat. No. and description | Dimensions H x W x D in. (cm) | Storage | CryoPlus 1 system | CryoPlus 2 system | CryoPlus 3 system | CryoPlus 4 system | |
|---|---|---|----------------------|----------------------|----------------------|----------------------|--------|
| Vertical rack for liquid phase storage | | | | | | | |
|  | 4000012 | 27.6 x 2.3 x 5.7 (70.1 x 5.8 x 14.5) | Racks per vessel | 10 | 27 | 46 | 78 |
| | Rack includes cardboard boxes and cardboard dividers for 1.5/2 mL vials | | Boxes per rack | 5 | 5 | 5 | 5 |
| | | | Vials per box | 100 | 100 | 100 | 100 |
| | | | Vials per vessel | 5,000 | 13,500 | 23,000 | 39,000 |

| | | | | | | | |
|---|---|---|------------------|-------|--------|--------|--------|
| Vertical rack for vapor phase storage | | | | | | | |
|  | 4000011 | 22.2 x 2.3 x 5.7 (56.4 x 5.8 x 14.5) | Racks per vessel | 10 | 27 | 46 | 78 |
| | Rack includes cardboard boxes and cardboard dividers for 1.5/2 mL vials | | Boxes per rack | 4 | 4 | 4 | 4 |
| | | | Vials per box | 100 | 100 | 100 | 100 |
| | | | Vials per vessel | 4,000 | 10,800 | 18,400 | 31,200 |

| Platform risers required for racks in vapor phase storage | | | | | | | |
|---|--|--|--|---------|---------|---------|---------|
| Description of riser and racks for intended use | | | | | | | |
|  | 5 in. riser for use with 4000011 racks | | | 4000061 | 4000061 | 4000064 | 4000067 |

Boxes and dividers

| Cat. No. | Description |
|---|--|
|  4000014 | Cardboard box with 100-cell divider for use with 1.5/2 mL vials (does have drain hole) |
| 820010 | Polycarbonate box with 100-cell divider for use with 1.5/2 mL vials with internal threaded caps (does have drain hole) |
| 820011 | Polycarbonate box with 81-cell divider for use with 1.5/2 mL vials (does have drain hole) |

Lid locking pins

| Cat. No. | Description |
|----------|---|
| 1890632 | Factory-installed lid-locking pins (allows customers to securely lock the lid in the open position as a secondary user-safety feature)* |
| 1890633 | Certified technician (field-installed) lid-locking pins (allows customers to securely lock the lid in the open position as a secondary user-safety feature) |

* Lid-locking pins are not available as factory-installed items when a CryoPlus vapor-phase starter SKU is ordered.

Frames and canisters for liquid phase storage

| Cat. No. and description | Dimensions H x W x D in. (cm) | Storage | CryoPlus 1 system | CryoPlus 2 system | CryoPlus 3 system | CryoPlus 4 system |
|---|---|----------------------|----------------------|----------------------|----------------------|----------------------|
|  4000670 | 27.4 x 0.6 x 4.6 (69.6 x 1.5 x 11.7) | Frames per vessel | 28 | 72 | 124 | 204 |
| | | Canisters per frame | 7 | 7 | 7 | 7 |
| | | Canisters per vessel | 196 | 504 | 868 | 1,428 |
|  1900585 | 27.4 x 0.6 x 3.8 (69.6 x 1.5 x 9.7) | Frames per vessel | 34 | 100 | 184 | 314 |
| | | Canisters per frame | 7 | 7 | 7 | 7 |
| | | Canisters per vessel | 238 | 700 | 1,288 | 2,198 |
|  4000371 | 23.7 x 0.6 x 6.5 (60.2 x 1.5 x 16.5) | Frames per vessel | 28 | 68 | 108 | 186 |
| | | Canisters per frame | 4 | 4 | 4 | 4 |
| | | Canisters per vessel | 112 | 272 | 432 | 744 |
|  4000372 | 23.8 x 0.7 x 8.2 (60.5 x 1.8 x 20.8) | Frames per vessel | 22 | 50 | 90 | 154 |
| | | Canisters per frame | 4 | 4 | 4 | 4 |
| | | Canisters per vessel | 88 | 200 | 360 | 616 |
|  4000368 | 26.4 x 0.9 x 6.1 (67.1 x 2.3 x 15.5) | Frames per vessel | 19 | 46 | 72 | 126 |
| | | Canisters per frame | 4 | 4 | 4 | 4 |
| | | Canisters per vessel | 76 | 184 | 288 | 504 |
|  4000369 | 26.4 x 1 x 10 (67.1 x 2.5 x 25.4) | Frames per vessel | 10 | 28 | 48 | 84 |
| | | Canisters per frame | 4 | 4 | 4 | 4 |
| | | Canisters per vessel | 40 | 112 | 192 | 336 |

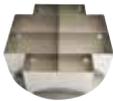
Frames and canisters for vapor phase storage

| Cat. No. and description | Dimensions H x W x D in. (cm) | Storage | CryoPlus 1 system | CryoPlus 2 system | CryoPlus 3 system | CryoPlus 4 system |
|---|---|----------------------|----------------------|----------------------|----------------------|----------------------|
|  4000660 | 23.5 x 0.6 x 4.6 (59.7 x 1.5 x 11.7) | Frames per vessel | 28 | 72 | 124 | 204 |
| | | Canisters per frame | 6 | 6 | 6 | 6 |
| | | Canisters per vessel | 168 | 432 | 744 | 1,224 |
|  1900584 | 23.5 x 0.6 x 3.8 (59.7 x 1.5 x 9.7) | Frames per vessel | 34 | 100 | 184 | 314 |
| | | Canisters per frame | 6 | 6 | 6 | 6 |
| | | Canisters per vessel | 204 | 600 | 1,104 | 1,884 |
|  4000371 | 23.7 x 0.6 x 6.5 (60.2 x 1.5 x 16.5) | Frames per vessel | 28 | 68 | 108 | 186 |
| | | Canisters per frame | 4 | 4 | 4 | 4 |
| | | Canisters per vessel | 112 | 272 | 432 | 744 |
|  4000372 | 23.8 x 0.7 x 8.2 (60.5 x 1.8 x 20.8) | Frames per vessel | 22 | 50 | 90 | 154 |
| | | Canisters per frame | 4 | 4 | 4 | 4 |
| | | Canisters per vessel | 88 | 200 | 360 | 616 |

Platform risers required for frames in vapor phase storage

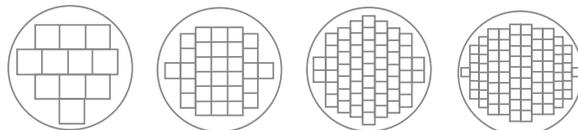
| | Description of riser and frames for intended use | CryoPlus 1 system | CryoPlus 2 system | CryoPlus 3 system | CryoPlus 4 system |
|---|---|-------------------|-------------------|-------------------|-------------------|
|  | 3.5 in. riser for use with 4000371 and 4000372 frames | 4000060 | 4000060 | 4000063 | 4000066 |
| | 4 in. riser for use with 4000660 frames | 4000056 | 4000062 | 4000065 | 4000068 |

Platform dividers

| | Description of platform divider and frames for intended use | CryoPlus 1 system | CryoPlus 2 system | CryoPlus 3 system | CryoPlus 4 system |
|--|---|-------------------|-------------------|-------------------|-------------------|
|  | Platform divider for use with 4000660 and 4000670 25 mL frames: 1900584 and 1900585 | 4000616 | 4000624 | 4000631 | 4000639 |
| | Platform divider for use with 4000371 frames | N/A | 4000075 | 4000050 | 4000053 |
| | Platform divider for use with 4000372 frames | N/A | 4000076 | 4000051 | 4000054 |
| | Platform divider for use with 4000368 frames | N/A | N/A | 4000047 | 4000052 |
| | Platform divider for use with 4000369 frames | N/A | N/A | 4000048 | N/A |

Canisters

| | Cat. No. and description | Dimensions H x W x D in. (cm) |
|---|---|---|
|  | 1950831 Swing arm canister for 25 mL bag (OriGen CS 25 or equivalent) | 3.6 x 3.915 x .375 (9.14 x 9.94 x 0.95) |
|  | 4000610 Swing arm canister for 50 mL bag (Fenwal 4R9951 or OriGen CS 50) | 3.7 x 6.3 x 0.5 (9.4 x 16 x 1.3) |
|  | 4000335 Sliding canister for 250 mL bag (Fenwal 4R5461 or OriGen CS 250, CryoMACS 50 and 250) | 5.5 x 7.6 x 0.4 (14 x 19.3 x 1) |
|  | 4000336 Sliding canister for 500 mL bag (Fenwal 4R5462 or OriGen CS 500) | 5.6 x 9.2 x 0.4 (14.2 x 23.4 x 1) |
|  | 4000332 Sliding canister for 200 mL bag (Gambro DF-200 or equivalent) | 6.4 x 7.8 x 0.8 (16.3 x 19.1 x 2) |
|  | 4000356 Swing arm canister for 200 mL bag (Gambro DF-200 or CryoMACS 250) | 6.4 x 7.8 x 0.8 (16.3 x 19.1 x 2) |
|  | 4000333 Sliding canister for 700 mL bag (Gambro DF-700 or CryoMACS 500 and 750 and OriGen CS 750 and CS 1000) | 6.5 x 11.8 x 0.8 (16.5 x 30 x 2) |
|  | 4000357 Swing arm canister for 700 mL bag (Gambro DF-700 or CryoMACS 500 and 750 and OriGen CS 750 and CS 1000) | 6.5 x 12.1 x 0.8 (16.5 x 30.7 x 2) |

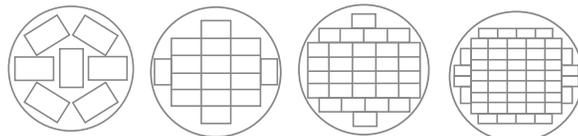


Mini square racks for liquid phase storage

| | Cat. No. and description | Dimensions H x W x D in. (cm) | Storage | CryoPlus 1 system | CryoPlus 2 system | CryoPlus 3 system | CryoPlus 4 system |
|---|---|--|------------------|----------------------|----------------------|----------------------|----------------------|
|  | 4000260 | 26.2 x 3.3 x 3.4 (66.5 x 8.4 x 8.6) | Racks per vessel | 11 | 30 | 55 | 92 |
| | Rack includes cardboard boxes and cardboard dividers for 1.5/2 mL vials | | Boxes per rack | 12 | 12 | 12 | 12 |
| | | | Vials per box | 25 | 25 | 25 | 25 |
| | | | Vials per vessel | 3,300 | 9,000 | 16,500 | 27,600 |

Mini boxes for liquid phase storage

| | Cat. No. | Description | |
|---|---------------|-------------|---|
|  | Boxes | 189470 | Mini cardboard box - 2.75 in. x 2.75 in. x 2 in. for use with 25-cell divider for use with 1.5/2 mL vials |
| | Cell dividers | 189387 | 25-cell divider for use in the 189470 box |



Racks for Thermo Scientific™ Matrix™ 2D tubes

| Cat. No. and description | | Dimensions H x W x D in. (cm) | Storage | CryoPlus 1 system | CryoPlus 2 system | CryoPlus 3 system | CryoPlus 4 system |
|---|---|---|------------------|----------------------|----------------------|----------------------|----------------------|
| Liquid phase | | | | | | | |
|  | 1950836 | 27 x 5.313 x 3.65 (68.6 x 13.5 x 9.3) | Racks per vessel | 7 | 16 | 30 | 51 |
| | Rack for Matrix 2D plates measuring 1.082 in. to 1.394 in. tall | | Plates per rack | 18 | 18 | 18 | 18 |
| | Plates per vessel | | 126 | 288 | 900 | 918 | |
|  | 1950839 | 27.15 x 5.313 x 3.65 (69 x 13.5 x 9.3) | Racks Per vessel | 7 | 16 | 30 | 51 |
| | Rack for Matrix 2D plates measuring 1.55 in. to 2.15 in. tall | | Plates per rack | 12 | 12 | 12 | 12 |
| | Plates per vessel | | 84 | 192 | 360 | 612 | |
|  | 1950840 | 27.5 x 5.313 x 3.65 (69.9 x 13.5 x 9.3) | Racks per vessel | 7 | 16 | 30 | 51 |
| | Rack for Matrix 2D plates measuring 2.3 in. tall | | Plates per rack | 11 | 11 | 11 | 11 |
| | Plates per vessel | | 77 | 176 | 330 | 561 | |
|  | 1950841 | 27.5 x 5.313 x 3.65 (69.9 x 13.5 x 9.3) | Racks per vessel | 7 | 16 | 30 | 51 |
| | Rack for Matrix 2D plates measuring 3.78 in. tall | | Plates per rack | 7 | 7 | 7 | 7 |
| | Plates per vessel | | 49 | 112 | 210 | 357 | |
| Vapor phase | | | | | | | |
|  | 1950832 | 22.5 x 5.313 x 3.65 (57.2 x 13.5 x 9.3) | Racks per vessel | 7 | 16 | 30 | 51 |
| | Rack for Matrix 2D plates measuring 1.082 in. to 1.394 in. tall | | Plates per rack | 15 | 15 | 15 | 15 |
| | Plates per vessel | | 105 | 240 | 450 | 765 | |
|  | 1950833 | 22.6 x 5.313 x 3.65 (57.4 x 13.5 x 9.3) | Racks per vessel | 7 | 16 | 30 | 51 |
| | Rack for Matrix 2D plates measuring 1.55 in. to 2.15 in. tall | | Plates per rack | 10 | 10 | 10 | 10 |
| | Plates per vessel | | 70 | 160 | 300 | 510 | |
|  | 1950834 | 22.5 x 5.313 x 3.65 (57.2 x 13.5 x 9.3) | Racks per vessel | 7 | 16 | 30 | 51 |
| | Rack for Matrix 2D plates measuring 2.3 in. tall | | Plates per rack | 9 | 9 | 9 | 9 |
| | Plates per vessel | | 63 | 144 | 270 | 459 | |
|  | 1950835 | 19.65 x 5.313 x 3.65 (49.9 x 13.5 x 9.3) | Racks per vessel | 7 | 16 | 30 | 51 |
| | Rack for Matrix 2D plates measuring 3.78 in. tall | | Plates per rack | 5 | 5 | 5 | 5 |
| | Plates per vessel | | 35 | 80 | 150 | 255 | |

Platform risers required for racks in vapor phase storage

|  | Description of riser and racks for intended use | CryoPlus 1 system | CryoPlus 2 system | CryoPlus 3 system | CryoPlus 4 system |
|--|---|---|----------------------|----------------------|----------------------|
| | | 5 in. riser for use with 1950832, 1950833, 1950834, and 1950835 racks | 4000061 | 4000061 | 4000064 |

Boxes and dividers

| Cat. No. | Description |
|----------------------|--|
| Boxes | |
| 4000014 | Cardboard box with 100-cell divider for use with 1.5/2 mL vials (does have drain hole) |
| 4000015 | Cardboard box with 100-cell divider for use with 4/5 mL vials (does have drain hole) |
| 820010 | Polycarbonate box with 100-cell divider for use with 1.5/2 mL vials with internal threaded caps (does have drain hole) |
| 820011 | Polycarbonate box with 81-cell divider for use with 1.5/2 mL vials (does have drain hole) |
| 4000238 | Stainless steel box for 1.5/2 mL vials (does not include 100-cell divider) |
| 4000239 | Stainless steel box for 4 mL vials (does not include 100-cell divider) |
| Cell dividers | |
| 4000013 | 100-cell divider for use in the 4000014, 4000015, 4000238, and 4000239 boxes |

Other accessories for CryoPlus systems

| Cat. No. and description | CryoPlus 1 system | CryoPlus 2 system | CryoPlus 3 system | CryoPlus 4 system |
|---|---|-------------------|------------------------------------|-------------------|
| Recorder kit | | | | |
|  | Factory installed 120 volt, 50/60 Hz with 6 in. diameter circular chart, 7-day temperature recorder, pen and chart drive (Specify top, left and right side mount; right side is default if not specified) | | 201175 | |
| | Factory installed 220 volt, 50/60 Hz with 6 in. diameter circular chart, 7-day temperature recorder, pen and chart drive (Specify top, left and right side mount; right side is default if not specified) | | 201280 | |
| | Replacement felt tip pen | | 245231 | |
| | Replacement circular chart paper | | 197064 | |
| Hot gas bypass valve assembly | | | | |
|  | Factory installed 120 volt, 50/60 Hz | | 195021 | |
| | Field installed (QI) 120 volt, 50/60 Hz | | 195700 | |
| | Factory installed 220 volt, 50/60 Hz | | 195023 | |
| | Field installed (QI) 220 volt, 50/60 Hz | | 195701 | |
| Thermal temperature sleeve (27" tall for improved temperature uniformity) | | | | |
|  | Factory installed | | Standard, factory-installed option | |
| | Customer installed/retrofit | | 1950706 | 1950707 |
| Thermal data printed | | | | |
|  | 120V, 60 Hz Printer with cable assembly and RS-232 connector kit | | 4000565 | |
| | 220V, 50 Hz Printer with cable assembly and RS-232 connector kit | | 4000665 | |
| | Thermal printer paper (5 rolls/package) | | 4000566 | |
| RJ-11 Remote Alarm Cable Kit | | | | |
| | Used to connect remote alarm to equipment | | 400142 | |

Quality services available (must be ordered with equipment)

| | |
|--------|---|
| 260049 | Certification of compliance (unit specific) |
| 260045 | Temperature mapping |
| 260043 | Certificate of conformance |

High-efficiency storage



CryoExtra cryogenic storage

Thermo Scientific™ CryoExtra™ 8100 series high-efficiency storage solutions provide outstanding sample protection for scientific research, with uniform cryogenic temperatures throughout the vessel. Automated temperature monitoring and microprocessor-based LN₂ level control provide peace of mind for valuable samples. Ease of use is enabled with built-in steps, flat workspace, and ergonomic lids. All vessels can accommodate both vapor- and liquid-phase storage.

- Four capacities from 463 L to 1,770 L
- Sample capacity from 19,500 up to 93,000 1.2–2.0 mL vials (30,420 to 152,100 Cryobank vials)
- Minimal footprint—1,770 L model has the same exterior footprint as the 1,745 L unit, saving valuable lab space
- Outstanding temperature uniformity
- Stable lid opening temperature
- Advanced temperature monitor and alarms
- Automated fill and level monitoring
- Hot gas bypass keeps warm nitrogen gas from impacting samples during a fill cycle
- User-comfort features and convenient, built-in workspace
- Lockable lid for sample protection
- Designed for global use with 100-240V and 50/60 Hz power supplies; local power cords and plug sets available



Microprocessor-based controller

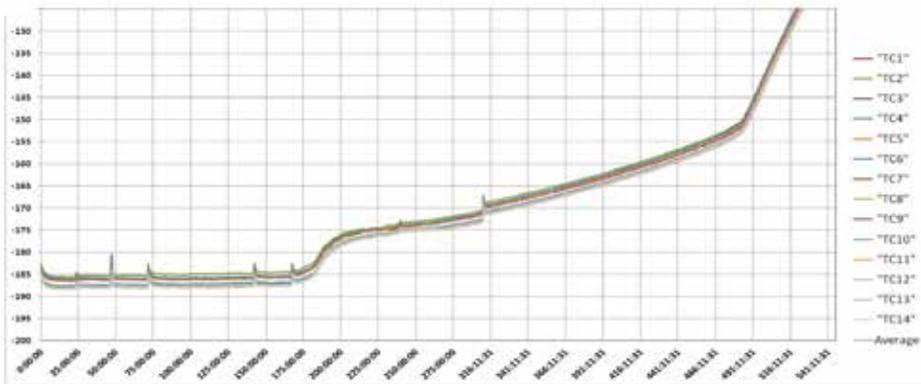


Figure 1. No LN₂ resupply test result (Cat. No. CE8140). The insulative properties of the CE8140 are demonstrated through a no LN₂ re-supply test. The CE8140 is filled with LN₂ to the high fill setpoint, and the LN₂ is removed. The temperature is then monitored using 16 sensors, measuring how long it takes to reach two benchmark temperatures: -185°C and -135°C. As shown in the figure, the CE8140 was able to keep the average internal temperature below -185°C for seven days. The tank was also able to keep the temperature below -135°C for 21 days.

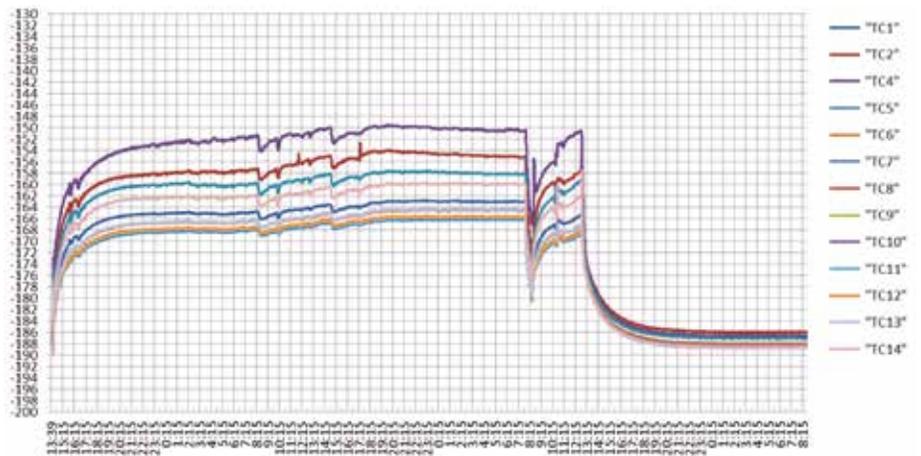


Figure 2. Lid open test result (Cat.No. CE8140). The lid open test is a measure of the ability of a unit to maintain temperature under an extreme lid opening event, as well as the ability to recover once the lid is re-applied. As the data shows, the CE8140 was able to maintain average temperatures for all probes at or below -150°C over the 48 hour course of the test. Once the lid was re-applied, it took four hours for the CE8140 to reach an average temperature of -185°C.

Maximum capacity

Designed to maximize sample capacity with minimum footprint, the CryoExtra system accepts both vertical and horizontal racks. These cryogenic racking solutions are designed for the vessel's storage configuration, further maximizing capacity. Our 93,000 sample-capacity model has the same footprint as our 80,600 sample-capacity model, saving valuable floor space.

Uniform temperatures

Minimal top-to-bottom temperature variation is achieved due to the vacuum-insulated stainless steel vessel.

Stable lid open temperature

Innovative lid and neck design enables stable temperature even during lid openings, conserving liquid nitrogen and maintaining temperature.

Advanced temperature monitoring controller

A microprocessor controller monitors temperature using thermocouples accurate to +/- 1°C. Other features include user-adjustable alarm setpoint with full alarm mute options, built-in remote alarm contacts, and easy-to-read level indicator.

Automated fill and level monitoring

Four thermistors monitor both the fill and control LN₂ levels to help ensure proper levels. Self-diagnostics help ensure reliable sensor functioning. Monitor features include current temperature display, high-temperature alarm, LN₂ level and alarms, sensor fail alarm, and filling status.

Hot gas bypass

This feature keeps samples safe from warm nitrogen gas during a fill cycle, improving sample security.

Convenient work space

A stainless platform near the vessel opening provides a flat surface for ergonomic rack placement and speeding sample recovery. All units feature integral, folding steps, and interior trap door for sub-carousel access.



Interior trap door

CryoExtra systems

Selection guide

| | CryoExtra 20 system | CryoExtra 40 system | CryoExtra 80 system | CryoExtra 94 system |
|--|------------------------|-------------------------|---------------------------|---------------------------|
| LN ₂ capacity (capacity under turntable) | 463 liters (55 liters) | 797 liters (133 liters) | 1,745 liters (318 liters) | 1,770 liters (296 liters) |
| Maximum system capacity | | | | |
| Vial capacity (1.2–2 mL) | 19,500 | 40,600 | 80,600 | 93,000 |
| Blood bag capacity (frames) 25 mL | 1,528 (191) | 2,632 (376) | 5,376 (768) | 6,144 (768) |
| Blood bag capacity (frames) 50 mL, Fenwal 4R9951 | 896 (112) | 1,533 (219) | 3,080 (440) | 3,520 (440) |
| Blood bag capacity (frames) 250 mL, Fenwal 4R9953 | 480 (96) | 900 (188) | 1,860 (372) | 1,860 (372) |
| Blood bag capacity (frames) 500 mL, Fenwal 4R9955 | 340 (68) | 660 (132) | 1,410 (282) | 1,410 (282) |
| Blood bag capacity (frames) 500 mL, Gambro DF-200 | 320 (64) | 468 (117) | 960 (240) | 1,200 (240) |
| Blood bag capacity (frames) 700 mL, Gambro DF-700 | 180 (36) | 280 (70) | 568 (142) | 710 (142) |
| Rack configuration requirements for maximum capacity (combination of square and mini racks) | | | | |
| Square 2 in. boxes | Holds 100 2 mL vials | Holds 100 2 mL vials | Holds 100 2 mL vials | Holds 100 2 mL vials |
| Racks for 100 cell boxes | 12 (1950683) | 26 (1950866) | 60 (1950696) | 60 (1950683) |
| Racks for 25 cell boxes | 4 (1950686) | 12 (1950871) | 8 (1950685) | 8 (1950686) |
| Stages per rack | 15 | 14 | 13 | 15 |

Specifications (non-medical device)*

| Model* | Cat. No. | Vial capacity 1.2–2.0 mL (Cryobank) | Electrical | Plug type | Usable interior height in. (cm) | Exterior dimensions H x W x D in. (cm) | Neck diameter in. (mm) | Inner diameter in. (mm) | Weight (full) | Regulatory listings | LN ₂ and utility connection |
|---------------------|----------|-------------------------------------|----------------------|-----------|---------------------------------|---|------------------------|-------------------------|--------------------|---------------------|---|
| CryoExtra 20 system | CE8120 | 19,500 (30,420 ¹) | 100–230V 50/60 Hz | NEMA 5-15 | 34.5 (87.7) | 65 x 32 x 32 (165.1 x 81.3 x 81.3) | 12.5 (317) | 28.2 (731) | 1,340 lbs/ 608 kg | cULus and CE | All models require 22 psi (1.5 bar) low pressure supply tank and are supplied with (1) 0.5 in. 45° flare stainless steel flexible transfer hose |
| CryoExtra 40 system | CE8140 | 40,600 (61,516 ¹) | | NEMA 5-15 | 30.8 (78.2) | 63.25 x 42 x 42 (160.7 x 106.6 x 106.6) | 17.5 (445) | 38.7 (983) | 2,140 lbs/ 971 kg | | |
| CryoExtra 80 system | CE8180 | 80,600 (131,820 ¹) | | NEMA 5-15 | 29.2 (74.2) | 68.19 x 60 x 60 (173.3 x 152.4 x 152.4) | 25 (635) | 54.75 (1391) | 4,830 lbs/ 2191 kg | | |
| CryoExtra 94 system | CE8194 | 93,000 (152,100 ¹) | | NEMA 5-15 | 34.2 (86.9) | 73.19 x 60 x 60 (185.9 x 152.4 x 152.4) | 25 (635) | 54.75 (1391) | 4,875 lbs/ 2211 kg | | |

* Using Nunc dense storage boxes (196-cell) and 1 mL Cryobank tubes.

CryoExtra Cryogenic Storage (general purpose with battery back-up system)*

| Model* | Cat. No. | Vial capacity 1.2–2.0 mL (Cryobank) | Electrical | Plug type | Usable interior height in. (cm) | Exterior dimensions H x W x D in. (cm) | Neck diameter in. (mm) | Inner diameter in. (mm) | Weight (full) | Regulatory listings | LN ₂ and utility connection |
|-----------------|----------|-------------------------------------|----------------------|-----------|---------------------------------|---|------------------------|-------------------------|--------------------|---------------------|---|
| CryoExtra 20 BB | CE8120BB | 19,500 (30,420 ¹) | 100–230V 50/60 Hz | CEE 7/7 | 34.5 (87.7) | 65 x 32 x 32 (165.1 x 81.3 x 81.3) | 12.5 (317) | 28.2 (731) | 1,340 lbs/ 608 kg | cULus and CE | All models require 22 psi (1.5 bar) low pressure supply tank and are supplied with (1) 0.5 in. 45° flare stainless steel flexible transfer hose |
| CryoExtra 40 BB | CE8140BB | 40,600 (61,516 ¹) | | | 30.8 (78.2) | 63.25 x 42 x 42 (160.7 x 106.6 x 106.6) | 17.5 (445) | 38.7 (983) | 2,140 lbs/ 971 kg | | |
| CryoExtra 80 BB | CE8180BB | 80,600 (131,820 ¹) | | | 29.2 (74.2) | 68.19 x 60 x 60 (173.3 x 152.4 x 152.4) | 25 (635) | 54.75 (1391) | 4,830 lbs/ 2191 kg | | |
| CryoExtra 94 BB | CE8194BB | 93,000 (152,100 ¹) | | | 34.2 (86.9) | 73.19 x 60 x 60 (185.9 x 152.4 x 152.4) | 25 (635) | 54.75 (1391) | 4,875 lbs/ 2211 kg | | |

* General purpose models with built-in battery back-up system are regional offerings only available to customers in the EU EEMEA region and China.

¹ Using Nunc Dense storage boxes (196-cell) and 1 mL CryoBank tubes.

CryoExtra rack selection

| Cat. No. and description | | Dimensions H x W x D in. (cm) | Storage | CryoExtra 20 system | CryoExtra 40 system | CryoExtra 80 system | CryoExtra 94 system |
|---|---|---|--------------------|------------------------|------------------------|------------------------|------------------------|
| Square racks | | | | | | | |
|  | 1950683 | 32.5 x 5.5 x 5.63 (82.6 x 14 x 14.3) | Racks per vessel | 12 | N/A | N/A | 60 |
| | Rack includes cardboard boxes and dividers for 1.5/2 mL vials | | Boxes per rack | 15 | N/A | N/A | 15 |
| | Vials per box | | 100 | N/A | N/A | 100 | |
| | Vials per vessel | | 18,000 | N/A | N/A | 90,000 | |
|  | 1950696 | 28.4 x 5.5 x 5.63 (72.1 x 14 x 14.3) | Racks per vessel | 12 | 26 | 60 | 60 |
| | Rack includes cardboard boxes and cardboard dividers for 1.5/2 mL vials | | Boxes per rack | 13 | 13 | 13 | 13 |
| | Vials per box | | 100 | 100 | 100 | 100 | |
| | Vials per vessel | | 15,600 | 33,800 | 78,000 | 78,000 | |
|  | 4000007 | 27.4 x 5.5 x 5.63 (69.6 x 14 x 14.3) | Racks Per vessel | 12 | 26 | 60 | 60 |
| | Rack includes stainless steel boxes and cardboard dividers for 1.5/2 mL vials | | Boxes per rack | 13 | 13 | 13 | 13 |
| | Vials per box | | 13 | 13 | 13 | 13 | |
| | Vials per vessel | | 15,600 | 33,800 | 78,000 | 78,000 | |
|  | 1950866 | 30.6 x 5.5 x 5.63 (77.7 x 14 x 14.3) | Racks per vessel | 12 | 26 | N/A | 60 |
| | Rack includes cardboard boxes and cardboard dividers for 1.5/2 mL vials | | Boxes per rack | 14 | 14 | N/A | 14 |
| | Vials per box | | 100 | 100 | N/A | 100 | |
| | Vials per vessel | | 16,800 | 36,400 | N/A | 84,000 | |
|  | 4000008 | 25.4 x 5.5 x 5.63 (64.5 x 14 x 14.3) | Racks per vessel | 12 | 26 | 60 | 60 |
| | Rack includes cardboard boxes and cardboard dividers for 4 mL vials | | Boxes per rack | 8 | 8 | 8 | 8 |
| | Vials per box | | 100 | 100 | 100 | 100 | |
| | Vials per vessel | | 9,600 | 20,800 | 48,000 | 48,000 | |
|  | 4000009 | 25.4 x 5.5 x 5.63 (64.5 x 14 x 14.3) | Racks per vessel | 12 | 26 | 60 | 60 |
| | Rack includes stainless steel boxes and cardboard dividers for 4 mL vials | | Boxes per rack | 8 | 8 | 8 | 8 |
| | Vials per box | | 100 | 100 | 100 | 100 | |
| | Vials per vessel | | 9,600 | 20,800 | 48,000 | 48,000 | |
|  | 4000010 | 26.6 x 5.5 x 5.63 (67.6 x 14 x 14.3) | Racks per vessel | 12 | 26 | 60 | 60 |
| | Rack includes cardboard boxes and cardboard dividers for 5 mL vials | | Boxes per rack | 7 | 7 | 7 | 7 |
| | Vials per box | | 100 | 100 | 100 | 100 | |
| | Vials per vessel | | 8,400 | 18,200 | 42,000 | 42,000 | |
| Specialty racks | | | | | | | |
|  | 4000379* | 23.9 x 5.5 x 5.63 (60.7 x 14 x 16) | Racks per vessel | 12 | 26 | 60 | 60 |
| | SUC-1 rack for cane storage (includes canisters #4000176) | | Canisters per rack | 8 | 8 | 8 | 8 |
| | Canes per canister | | 25 | 25 | 25 | 25 | |
| | Canes per vessel | | 2,400 | 5,200 | 12,000 | 12,000 | |

* Each canister will hold 25 canes without Thermo Scientific™ Nalgene™ CryoSleeve™ vial holders or 16 canes with CryoSleeve vial holders.

Boxes and dividers

| Cat. No. | Description |
|----------------------|--|
| Boxes | |
| 4000014 | Cardboard box with 100-cell divider for use with 1.5/2 mL vials (does have drain hole) |
| 4000015 | Cardboard box with 100-cell divider for use with 4/5 mL vials (does have drain hole) |
| 820010 | Polycarbonate box with 100-cell divider for use with 1.5/2 mL vials with internal threaded caps (does have drain hole) |
| 820011 | Polycarbonate box with 81-cell divider for use with 1.5/2 mL vials (does have drain hole) |
| 820013 | Polycarbonate box with 81-cell divider for use with 4 mL vials (does have drain hole) |
| 4000238 | Stainless steel box for 1.5/2 mL vials (does not include 100-cell divider) |
| 4000239 | Stainless steel box for 4 mL vials (does not include 100-cell divider) |
| Cell dividers | |
| 4000013 | 100-cell divider for use in the 4000014, 4000015, 4000238, and 4000239 boxes |

CryoExtra rack selection

| Cat. No. and description | | Dimensions H x W x D in. (cm) | Storage | CryoExtra 20 system | CryoExtra 40 system | CryoExtra 80 system | CryoExtra 94 system |
|---|---|---|------------------|------------------------|------------------------|------------------------|------------------------|
| Vertical racks | | | | | | | |
|  | 4000012 | 27.6 x 2.3 x 5.7 (70.1 x 5.8 x 14.5) | Racks per vessel | 36 | 70 | 156 | 156 |
| | Rack includes cardboard boxes and cardboard dividers for 1.5/2 mL vials | | Boxes per rack | 5 | 5 | 5 | 5 |
| | | | Vials per box | 100 | 100 | 100 | 100 |
| | | | Vials per vessel | 18,000 | 35,000 | 78,000 | 78,000 |
|  | 1950694 | 32.8 x 2.3 x 5.7 (83.3 x 5.8 x 14.5) | Racks per vessel | 36 | N/A | N/A | 156 |
| | Rack includes cardboard boxes and cardboard dividers for 1.5/2 mL vials | | Boxes per rack | 6 | N/A | N/A | 6 |
| | | | Vials per box | 100 | N/A | N/A | 100 |
| | | | Vials per vessel | 19,500 | N/A | N/A | 93,000 |

CryoExtra rack selection

| Cat. No. and description | | Dimensions H x W x D in. (cm) | Storage | CryoExtra 20 system | CryoExtra 40 system | CryoExtra 80 system | CryoExtra 94 system |
|---|---|---|----------------------|--|------------------------|------------------------|------------------------|
| Frames and canisters | | | | | | | |
|  | 1900585 | 27 x 0.7 x 3.4 (68.6 x 1.8 x 8.6) | Frames per vessel | 191 | 376 | 768 | 768 |
| | Frame for 1950831 canister | | Canisters per frame | 7 | 7 | 7 | 7 |
| | | | Canisters per vessel | 1,337 | 2,632 | 5,376 | 5,376 |
|  | 1950873 | 30.8 x 0.7 x 3.4 (78.2 x 1.8 x 8.6) | Frames per vessel | 191 | N/A | N/A | 768 |
| | Frame for 1950831 canister | | Canisters per frame | 8 | N/A | N/A | 8 |
| | | | Canisters per vessel | 1,528 | N/A | N/A | 6,144 |
|  | 4000670 | 27.4 x 0.6 x 4.6 (69.6 x 1.5 x 11.7) | Frames per vessel | 112 | 219 | 440 | 440 |
| | Frame for 4000610 canister | | Canisters per frame | 7 | 7 | 7 | 7 |
| | | | Canisters per vessel | 784 | 1,533 | 3,080 | 3,080 |
|  | 1950687 | 31.2 x 0.6 x 3.8 (79.2 x 1.5 x 9.7) | Frames per vessel | 112 | N/A | N/A | 440 |
| | Frame for 4000610 canister | | Canisters per frame | 8 | N/A | N/A | 8 |
| | | | Canisters per vessel | 896 | N/A | N/A | 3,520 |
|  | 1950688 | 29.6 x 0.7 x 6.5 (75.2 x 1.8 x 16.5) | Frames per vessel | 96 | 180 | 372 | 372 |
| | Frame for 4000335 canister | | Canisters per frame | 5 | 5 | 5 | 5 |
| | | | Canisters per vessel | 480 | 900 | 1,860 | 1,860 |
|  | 1950689 | 29.6 x 0.7 x 8.2 (75.2 x 1.8 x 20.8) | Frames per vessel | 68 | 132 | 282 | 282 |
| | Frame for 4000336 canister | | Canisters per frame | 5 | 5 | 5 | 5 |
| | | | Canisters per vessel | 340 | 660 | 1,410 | 1,410 |
|  | 4000368 | 26.4 x .9 x 6.1 (67.1 x 2.3 x 15.5) | Frames per vessel | 64 | 117 | 240 | 240 |
| | Frame for 4000332 and 4000356 canisters | | Canisters per frame | 4 | 4 | 4 | 4 |
| | | | Canisters per vessel | 256 | 468 | 960 | 960 |
|  | 1950692 | 29.6 x 0.9 x 6.5 (75.2 x 2.3 x 16.5) | Frames per vessel | 64 | N/A | N/A | 240 |
| | Frame for 4000332 and 4000356 canisters | | Canisters per frame | 5 | N/A | N/A | 5 |
| | | | Canisters per vessel | 320 | N/A | N/A | 1,200 |
|  | 4000369 | 26.4 x 1 x 10 (67.1 x 2.5 x 25.4) | Frames per vessel | 36 | 70 | 142 | 142 |
| | Frame for 4000333 and 4000357 canisters | | Canisters per frame | 4 | 4 | 4 | 4 |
| | | | Canisters per vessel | 144 | 280 | 568 | 568 |
|  | 1950693 | 32.9 x 1 x 10 (83.6 x 2.5 x 25.4) | Frames per vessel | 36 | N/A | N/A | 142 |
| | Frame for 4000333 and 4000357 canisters | | Canisters per frame | 5 | N/A | N/A | 5 |
| | | | Canisters per vessel | 180 | N/A | N/A | 710 |
| Canisters for above frames | | | | | | | |
|  | 1950831 | 3.6 x 3.915 x 0.375 (9.14 x 9.94 x 0.95) | | Swing arm canister for 25 mL bag (OriGen CS 25, or equivalent) | | | |
|  | 4000610 | 3.7 x 6.3 x 0.5 (9.4 x 16 x 1.3) | | Swing arm canister for 50 mL bag (Fenwal 4R9951, or OriGen CS 50, or equivalent) | | | |
|  | 4000335 | 5.5 x 7.6 x 0.4 (14 x 19.3 x 1) | | Sliding canister for 250 mL bag (Fenwal 4R5461, OriGen CS 250, CryoMACS 50 and 250, or equivalent) | | | |
|  | 4000336 | 5.6 x 9.2 x 0.4 (14.2 x 23.4 x 1) | | Sliding canister for 500 mL bag (Fenwal 4R5462, OriGen CS 500, or equivalent) | | | |
|  | 4000332 | 6.4 x 7.8 x 0.8 (16.3 x 19.1 x 2) | | Sliding canister for 200 mL bag (Gambro DF-200 or equivalent) | | | |
|  | 4000356 | 6.4 x 7.8 x 0.8 (16.3 x 19.1 x 2) | | Swing arm canister for 200 mL bag (Gambro DF-200, CryoMACS 250, or equivalent) | | | |
|  | 4000333 | 6.5 x 11.8 x 0.8 (16.5 x 30 x 2) | | Sliding canister for 700 mL bag (Gambro DF-700, CryoMACS 500 and 750, and OriGen CS 750, and CS 1000, or equivalent) | | | |
|  | 4000357 | 6.5 x 12.1 x 0.8 (16.5 x 30.7 x 2) | | Swing arm canister for 700 mL bag (Gambro DF-700, CryoMACS 500 and 750, and OriGen CS 750, and CS 1000, or equivalent) | | | |

CryoExtra rack selection

| Cat. No. and description | Dimensions H x W x D in. (cm) | Storage | CryoExtra 20 system | CryoExtra 40 system | CryoExtra 80 system | CryoExtra 94 system | |
|--|---|--|------------------------|------------------------|------------------------|------------------------|-------|
| Mini square racks for liquid phase storage | | | | | | | |
|  1950685 | 1950685 | 28.5 x 3.2 x 3.3 (72.4 x 8.1 x 8.4) | Racks per vessel | 4 | 12 | 8 | 8 |
| | Rack includes cardboard boxes and cardboard dividers for 1.5/2 mL vials | | Boxes per rack | 13 | 13 | 13 | 13 |
| | | | Vials per box | 25 | 25 | 25 | 25 |
| | | | Vials per vessel | 1,300 | 3,900 | 2,600 | 2,600 |
| | 1950871 | 30.7 x 3.2 x 3.3 (78 x 8.1 x 8.4) | Racks per vessel | 4 | 12 | N/A | 8 |
| | Rack includes cardboard boxes and cardboard dividers for 1.5/2 mL vials | | Boxes per rack | 14 | 14 | N/A | 14 |
| | | | Vials per box | 25 | 25 | N/A | 25 |
| | | | Vials per vessel | 1,400 | 4,200 | N/A | 2,800 |
| | 1950686 | 32.9 x 3.2 x 3.3 (83.6 x 8.1 x 8.4) | Racks per vessel | 4 | N/A | N/A | 8 |
| | Rack includes cardboard boxes and cardboard dividers for 1.5/2 mL vials | | Boxes per rack | 15 | N/A | N/A | 15 |
| | | | Vials per box | 25 | N/A | N/A | 25 |
| | | | Vials per vessel | 1,500 | N/A | N/A | 3,000 |

Boxes and dividers

| Cat. No. and description | |
|--|--|
|  | Boxes |
| | 189470 Mini cardboard box—2.75 x 2.75 x 2 in. for use with 25-cell divider for use with 1.5/2 mL vials |
| | Cell dividers |
| 189387 25-cell divider for use in the 189470 box | |

Additional accessories

| Cat No. and description | |
|-------------------------|----------------------------------|
| 20820733 | 2-tier step for the CryoExtra 20 |

Optional battery back-up

| Cat. No. and description | |
|--------------------------|--|
| CE8100BB | Optional battery back-up for non-MDD units (MDD units include battery back-up) |

CryoExtra rack selection

| Cat. No. and description | | Dimensions H x W x D in. (cm) | Storage | CryoExtra 20 system | CryoExtra 40 system | CryoExtra 80 system | CryoExtra 94 system |
|---|---|--|------------------|------------------------|------------------------|------------------------|------------------------|
| Racks for Matrix 2D plates | | | | | | | |
|  | 1950836 | 27 x 5.313 x 3.65 (68.6 x 13.5 x 9.3) | Racks per vessel | 20 | 40 | 96 | 96 |
| | Rack for Matrix 2D plates Height: 1.082 to 1.394 in. | | Plates per rack | 18 | 18 | 18 | 18 |
| | Plates per vessel | | 360 | 720 | 1,728 | 1,728 | |
|  | 1950839 | 27.15 x 5.313 x 3.65 (69 x 13.5 x 9.3) | Racks per vessel | 20 | 40 | 96 | 96 |
| | Rack for Matrix 2D plates Height: 1.55 to 2.15 in. | | Plates per rack | 12 | 12 | 12 | 12 |
| | Plates per vessel | | 240 | 480 | 1,152 | 1,152 | |
|  | 1950840 | 27.5 x 5.313 x 3.65 (70 x 13.5 x 9.3) | Racks per vessel | 20 | 40 | 96 | 96 |
| | Rack for Matrix 2D plates Height: 2.3 in. | | Plates per rack | 11 | 11 | 11 | 11 |
| | Plates per vessel | | 220 | 440 | 1,056 | 1,056 | |
|  | 1950841 | 27.5 x 5.313 x 3.65 (70 x 13.5 x 9.3) | Racks per vessel | 20 | 40 | 96 | 96 |
| | Rack for Matrix 2D plates Height: 3.78 in. | | Plates per rack | 7 | 7 | 7 | 7 |
| | Plates per vessel | | 140 | 280 | 672 | 672 | |
|  | 1950842 | 33 x 5.313 x 3.65 (83.8 x 13.5 x 9.3) | Racks per vessel | 20 | N/A | N/A | 96 |
| | Rack for Matrix 2D plates Height: 1.022 to 1.4 in. | | Plates per rack | 22 | N/A | N/A | 22 |
| | Plates per vessel | | 440 | N/A | N/A | 2,112 | |
|  | 1950843 | 31.7 x 5.313 x 3.65 (80.5 x 13.5 x 9.3) | Racks per vessel | 20 | N/A | N/A | 96 |
| | Rack for Matrix 2D plates Height: 1.55 to 2.15 in. | | Plates per rack | 14 | N/A | N/A | 14 |
| | Plates per vessel | | 280 | N/A | N/A | 1,344 | |
|  | 1950844 | 32.5 x 5.313 x 3.65 (82.5 x 13.5 x 9.3) | Racks per vessel | 20 | N/A | N/A | 96 |
| | Rack for Matrix 2D plates Height: 2.3 in. | | Plates per rack | 13 | N/A | N/A | 13 |
| | Plates per vessel | | 260 | N/A | N/A | 1,248 | |
|  | 1950845 | 31.4 x 5.313 x 3.65 (79.7 x 13.5 x 9.3) | Racks per vessel | 20 | N/A | N/A | 96 |
| | Rack for Matrix 2D plates Height: 3.78 in. | | Plates per rack | 8 | N/A | N/A | 8 |
| | Plates per vessel | | 160 | N/A | N/A | 768 | |

Cost-effective storage



BioCane canister and cane systems

Thermo Scientific™ BioCane™ storage systems provide a cost-effective way to store biological samples in canes. Available in four sizes, the system can safely hold samples for extended periods of time without replenishing LN₂.

- All models include stainless steel canisters
- Canister handles are color-coded for easy canister identification
- Durable aluminum construction and vacuum insulation
- Narrow-mouth design minimizes LN₂ evaporation
- Lockable lid and optional low-level alarm enhance sample security
- Available accessories
 - Roller base
 - Low-level alarm
 - Canes
 - CryoSleeve holders

BioCane storage systems

| | BioCane 20 system | BioCane 34 system | BioCane 47 system | BioCane 73 system |
|--|----------------------------|----------------------------|---------------------------|---------------------------|
| Cat. No. | CK509X2 | CK509X3 | CK509X4 | CK509X6 |
| LN ₂ capacity (liters) | 20.5 | 34.8 | 47.4 | 73 |
| Canisters per unit | 6 | 6 | 6 | 8 |
| Canister dimensions: in. (cm) | 11 x 1.5 Dia. (27.9 x 3.8) | 11 x 2.8 Dia. (27.9 x 7.1) | 11 x 4 Dia. (27.9 x 10.2) | 11 x 4 Dia. (27.9 x 10.2) |
| Canes per canister | 5 | 20 | 42 | 42 |
| Total vial capacity (6/cane) | 180 | 720 | 1512 | 2016 |
| Total straw capacity (10/cane) | 300 | 1200 | 2520 | 3360 |
| Static evaporation rate ¹ (liters/day) | .1 | .18 | .4 | .6 |
| Neck diameter: in. (cm) | 2 (5.1) | 3.5 (8.8) | 5 (12.7) | 6 (15.2) |
| Exterior dimensions Diameter x height: in. (cm) | 14.5 x 25.7 (36.8 x 65.3) | 18.2 x 26.6 (47.2 x 67.6) | 20 x 26.5 (50.8 x 67.3) | 22 x 27.3 (55.9 x 69.3) |
| Shipping weight | 29 lbs. / 13.2 kg | 41 lbs. / 18.6 kg | 47 lbs. / 21.4 kg | 95 lbs./ 43.2 kg |
| Regulatory listings | CE | CE | CE | CE |

¹ Static evaporation rates based on new vessel, no heat load, and no lid openings. Rates may vary due to ambient conditions and usage.



BioCane system accessories

| | BioCane 20 system | BioCane 34 system | BioCane 47 system | BioCane 73 system |
|---|-------------------|-------------------|-------------------|-------------------|
| Vials, 1 mL, case of 500 | AY509X32 | AY509X32 | AY509X32 | AY509X32 |
| Cryogenic vials(E), case/500, 1.2 mL, 13.5 mm O.K., 38.1 mm H | AY509X13 | AY509X13 | AY509X13 | AY509X13 |
| Vials, 1.5 mL, case of 500 | AY509X33 | AY509X33 | AY509X33 | AY509X33 |
| Cryogenic vials(E), case/500, 2.0 mL, 13.5 mm O.K., 48.3 mm H | AY509X12 | AY509X12 | AY509X12 | AY509X12 |
| Low-level alarm | 8130 | 8130 | 8130 | 8130 |
| Wheeled accessory cart (5 in. high) | AY509X9 | AY509X9 | AY509X9 | AY509X1 |
| Square rack option interchangeable with canisters (includes 5 cardboard boxes, each box with 25 cell dividers*) | N/A | N/A | 195555 | N/A |
| One cryo cane, 1.2 mL—6 ampule | 4000211 | 4000211 | 4000211 | 4000211 |
| CryoSleeve (100 per case, length 273 mm / 10.75 in.) | 4000218 | 4000218 | 4000218 | 4000218 |

Quick, efficient sample retrieval

Locator Plus rack and box systems

Thermo Scientific™ Locator™ Plus indexed storage systems provide cost-effective sample storage and offer efficient sample retrieval. All models are available with an ultrasonic level monitor.

- Outstanding temperature uniformity: samples are stored below -180°C even when less than 2 in. (5 cm) of liquid nitrogen remains in the vessel
- Ultrasonic level monitor safeguards irreplaceable samples—optional monitor provides continuous LED readout of liquid nitrogen level; activates visual and audible alarms when level falls below safe range
- Advanced vacuum insulation minimizes liquid nitrogen evaporation and reduces operating costs
- Lockable lid enhances sample security
- Includes stainless steel racks designed for use with 2 in. (5 cm) Thermo Scientific™ Nalgene™ cryogenic boxes (larger racks available for 5.0 mL ampoules in Locator Jr. Plus, Locator 4 Plus, and Locator 6 Plus systems)
- Available accessories
 - Roller base
 - Polycarbonate boxes
 - Cryogenic vials
 - Cryo logbook
 - Thermo Scientific™ CryoClaw™ ampoule remover
 - Low-level alarm





Locator Plus storage systems

| Cat. No. | Ultrasonic level monitor | LN ₂ capacity (liters) | Rack per unit | Box capacity per rack | 2 mL vials per box | 2 mL vial capacity (full unit) | Static evaporation rate ¹ (L/day) | Neck diameter in. (cm) | Exterior dimensions diameter x height in. (cm) | Shipping weight | Regulatory listings |
|-------------------------|--------------------------|-----------------------------------|---------------|-----------------------|--------------------|--------------------------------|--|------------------------|--|--------------------|---------------------|
| Locator Jr. Plus | | | | | | | | | | | |
| CY50925-70 | n/a | 71 | 4 | 5 | 100 | 2,000 | .85 | 8.5 (21.5) | 22 x 26.9 (55.8 x 68.3) | 91 lbs. / 41.4 kg | CE |
| CY509106 | standard | | | | | | | | | | cCSAus and CE |
| CY509106CN (China only) | | | | | | | | | | | cCSAus and CE |
| Locator 4 Plus | | | | | | | | | | | |
| CY50935-70 | n/a | 121 | 4 | 10 | 100 | 4,000 | .99 | 8.5 (21.5) | 22 x 37.5 (55.8 x 95.3) | 118 lbs. / 53.5 kg | CE |
| CY509108 | standard | | | | | | | | | | cCSAus and CE |
| CY509108CN (China only) | | | | | | | | | | | cCSAus and CE |
| Locator 6 Plus | | | | | | | | | | | |
| CY50985-70 | n/a | 184 | 6 | 10 | 100 | 6,000 | .99 | 8.5 (21.5) | 26 x 37.5 (66 x 95.3) | 160 lbs. / 72.6 kg | CE |
| CY509109 | standard | | | | | | | | | | cCSAus and CE |
| CY509109CN (China only) | | | | | | | | | | | cCSAus and CE |
| Locator 8 Plus | | | | | | | | | | | |
| CY50945-70 | n/a | 121 | 8 | 10 | 25 | 2,000 | .60 | 6 (15.2) | 22 x 37.5 (55.8 x 95.3) | 115 lbs. / 52.2 kg | CE |
| CY509111 | standard | | | | | | | | | | cCSAus and CE |
| CY509111CN (China only) | | | | | | | | | | | cCSAus and CE |

¹ Static evaporation rates based on new vessel, no heat load, and no lid openings. Rates may vary due to ambient conditions and usage.

Locator Plus accessories

| | Locator Jr. Plus | Locator 4 Plus | Locator 6 Plus | Locator 8 Plus |
|---|------------------|----------------|----------------|----------------|
| 5.0 mL vial rack , does not include boxes | HR509X19A-70 | HR509X20A-70 | HR509X32A-70 | N/A |
| Boxes, 2 in. height: 1.0 and 1.5 mL Nalgene vials, 100 vial per box, case of 10 | CS509X24 | CS509X24 | CS509X24 | N/A |
| Boxes, 2 in. height: 2 mL Nalgene vials, 25 vial per box, case of 80 | N/A | N/A | N/A | CS509X3 |
| Boxes, 2 in. height: 2 mL Nalgene vials, 81 vial per box, case of 40 | CS509X4 | CS509X4 | CS509X4 | N/A |
| Boxes, 2 in. height: 2 mL Nalgene vials, 81 vial per box, case of 20 | CS509X5 | CS509X5 | CS509X5 | N/A |
| Boxes, 4 in. height: 5 mL Nalgene vials, 81 vial per box, each | CS509X10 | CS509X10 | CS509X10 | N/A |
| Vials, 1 mL, case of 500 | AY509X32 | AY509X32 | AY509X32 | AY509X32 |
| Cryogenic vials (E), case/500, 1.2 mL, 13.5 mm O.K., 38.1 mm H | AY509X13 | AY509X13 | AY509X13 | AY509X13 |
| Vials, 1.5 mL, case of 500 | AY509X33 | AY509X33 | AY509X33 | AY509X33 |
| Cryogenic vials (E), case/500, 2.0 mL, 13.5 mm O.K., 48.3 mm H | AY509X12 | AY509X12 | AY509X12 | AY509X12 |
| Low-level alarm | 8130 | 8130 | 8130 | 8130 |
| Wheeled accessory cart (5 in. high) | AY509X1 | AY509X1 | AY509X1-70 | AY509X1 |
| Customer-installed level monitor 100-240V | CN509X16-70 | CN509X17-70 | CN509X15 | CN509X7-70 |
| Log book | 1950338 | 1950338 | 1950338 | 1950338 |
| CryoClaw ampoule remover | AY509X18 | AY509X18 | AY509X18 | AY509X18 |
| Replacement suction cups (2) for CryoClaw ampoule remover | AY509X19 | AY509X19 | AY509X19 | AY509X19 |



Simplified storage and retrieval

Locator rack and box systems

Thermo Scientific™ Locator™ indexed storage systems provide cost-effective sample storage and allow for efficient sample retrieval. All models are available with an ultrasonic level monitor.

- Outstanding temperature uniformity: samples are stored below -180°C even when less than 2 in. (5 cm) of liquid nitrogen remains in the vessel
- Ultrasonic level monitor safeguards irreplaceable samples
 - Optional monitor provides continuous LED readout of liquid nitrogen level; activates visual and audible alarms when level falls below safe range
- Lockable lid enhances sample security
- Includes stainless steel racks designed for use with 2 in. (5 cm) Nalgene cryogenic boxes (larger racks available for 5.0 mL ampoules in Locator Jr. and Locator 4 systems)
- Available accessories
 - Roller base
 - Polycarbonate boxes
 - Cryogenic vials
 - Cryo logbook
 - CryoClaw ampoule remover
 - Low-level alarm

thermo
scientific



Locator storage systems

| Cat. No | Level monitor | LN ₂ capacity (liters) | Rack per unit | Box capacity per rack | 2 mL vials per box | 2 mL vial capacity (full unit) | Static evaporation rate ¹ (L/day) | Neck diameter in. (cm) | Exterior dimensions diameter x height in. (cm) | Shipping weight | Regulatory listings |
|-------------------------|---------------|-----------------------------------|---------------|-----------------------|--------------------|--------------------------------|--|------------------------|--|--------------------|---------------------|
| Locator Jr. | | | | | | | | | | | |
| CY50925 | n/a | 60 | 4 | 4 | 100 | 1600 | .85 | 8.5 (21.5) | 22 x 24.5 (55.8 x 62.2) | 90 lbs. / 40.8 kg | CE |
| CY509105 | standard | | | | | | | | | | cCSAus and CE |
| CY509105CN (China only) | | | | | | | | | | | |
| Locator 4 | | | | | | | | | | | |
| CY50935 | n/a | 111 | 4 | 9 | 100 | 3600 | .99 | 8.5 (21.5) | 22 x 35.5 (55.8 x 90.2) | 115 lbs. / 52.2 kg | CE |
| CY509107 | standard | | | | | | | | | | cCSAus and CE |
| CY509107CN (China only) | | | | | | | | | | | |
| Locator 8 | | | | | | | | | | | |
| CY50945 | n/a | 111 | 8 | 9 | 25 | 1800 | .60 | 6 (15.2) | 22 x 35.5 (55.8 x 90.2) | 117 lbs. / 53.1 kg | CE |
| CY509110 | standard | | | | | | | | | | cCSAus and CE |
| CY509110CN (China only) | | | | | | | | | | | |

¹ Static evaporation rates based on new vessel, no heat load, and no lid openings. Rates may vary due to ambient conditions and usage.

Locator system accessories

| | Locator Jr. system | Locator 4 system | Locator 8 system |
|---|--------------------|------------------|------------------|
| 5.0 mL vial rack, does not include boxes | HR509X19A | HR509X20A | N/A |
| Boxes, 2 in. height: 1.0 and 1.5 mL Nalgene vials, 100 vial per box, case of 10 | CS509X24 | CS509X24 | N/A |
| Boxes, 2 in. height: 2 mL Nalgene vials, 25 vial per box, case of 80 | N/A | N/A | CS509X3 |
| Boxes, 2 in. height: 2 mL Nalgene vials, 81 vial per box, case of 40 | CS509X4 | CS509X4 | N/A |
| Boxes, 2 in. height: 2 mL Nalgene vials, 81 vial per box, case of 20 | CS509X5 | CS509X5 | N/A |
| Boxes, 4 in. height: 5 mL Nalgene vials, 81 vial per box, each | CS509X10 | CS509X10 | N/A |
| Vials, 1 mL, case of 500 | AY509X32 | AY509X32 | AY509X32 |
| Cryogenic vials, case/500, 1.2 mL, 13.5 mm, 38.1 mm H | AY509X13 | AY509X13 | AY509X13 |
| Vials, 1.5 mL, case of 500 | AY509X33 | AY509X33 | AY509X33 |
| Cryogenic vials, case/500, 2.0 mL, 13.5 mm, 48.3 mm H | AY509X12 | AY509X12 | AY509X12 |
| Low-level alarm | 8130 | 8130 | 8130 |
| Wheeled accessory cart (5 in. high) | AY509X1 | AY509X1 | AY509X1 |
| Customer installed level monitor 100-240V | CN509X16 | CN509X17 | CN509X7 |
| Log book | 1950338 | 1950338 | 1950338 |
| CryoClaw ampoule remover | AY509X18 | AY509X18 | AY509X18 |
| Replacement suction cups (2) for CryoClaw ampoule remover | AY509X19 | AY509X19 | AY509X19 |

Convenient LN₂ transfer

Liquid nitrogen transfer vessels

Designed for storing and dispensing small amounts of liquid nitrogen, Thermo Scientific™ Thermo series vessels include four models with capacities from 5 to 32 L.

- Designed to bring liquid nitrogen to other cryo vessels
- Lightweight aluminum design and small neck opening ensures ease of handling and low static evaporation rates
- Compact Thermo 5 and 10 dewars feature a convenient handle for pouring and for use in applications where only small quantities of liquid nitrogen are needed
- Thermo 10, 20, and 30 vessels can be fitted with an optional self-pressurized withdrawal device to easily dispense LN₂ without pouring
- Available accessories
 - Withdrawal device
 - 12 mL dipper
 - Roller base





LN₂ storage vessels

| | Thermo 5 | Thermo 10 | Thermo 20 | Thermo 30 |
|--|-----------------------------|------------------------------|-----------------------------|-----------------------------|
| Cat. No. | TY509X1 | TY509X2 | TY509X3 | TY509X4 |
| LN ₂ capacity (liters) | 5 | 10 | 20 | 32 |
| Static evaporation rates ¹ (liters per day) | .15 | .18 | .18 | .22 |
| Neck diameter: in. (cm) | 2.2 (5.6) | 2.2 (5.6) | 2 (5.0) | 2.5 (6.4) |
| Exterior dimensions: Diameter x height: in. (cm) | 8.8 x 18.2 (22.4 x 46.2) | 10.3 x 21.5 (26.2 x 54.6) | 8.8 x 18.2 (36.8 x 62.7) | 8.8 x 18.2 (43.2 x 61.2) |
| Shipping weight | 12 lbs. / 5.5 kg | 14 lbs. / 6.4 kg | 24 lbs. / 10.9 kg | 30 lbs. / 13.6 kg |

¹ Static evaporation rates based on new vessel, no heat load, and no lid openings. Rates may vary due to ambient conditions and usage.

Accessories

| Description | Thermo 5 | Thermo 10 | Thermo 20 | Thermo 30 |
|-------------------------------------|----------|-----------|-----------|-----------|
| Withdrawal device | N/A | AY509X5 | AY509X4 | AY509X3 |
| 12 mL dipper | AY509X6 | AY509X6 | AY509X6 | AY509X6 |
| Wheeled accessory cart (5 in. high) | N/A | N/A | AY509X9 | AY509X9 |

Safe sample shipping

Arctic Express storage systems

Thermo Scientific™ Arctic Express™ and Arctic Express™ Dual systems protect samples during shipment and storage. Featuring excellent flexibility and safety features, these systems can be used as dry shippers or laboratory cryo storage vessels.

Arctic Express IATA-shipper transport systems

- Worldwide shipment of precious samples with safety and security; approved for UN and IATA
- Two-week holding time preserves sample integrity
- Lockable cover with internal security compartment provides protection and sample isolation
- Aluminum container with handle holds internal security compartment

Arctic Express cryogenic shipping containers

- Innovative material absorbs liquid nitrogen to prevent spillage during shipment
- 14- and 21-day liquid nitrogen holding times allow specimens to be shipped safely
- Durable construction and sturdy base allow dry shipper to withstand rough handling
- Lockable lid prevents unauthorized entry
- Easily transported via most common carriers
- Lightweight aluminum design and convenient pail-style handle

Arctic Express Dual shipper storage systems

- When filled with liquid nitrogen, Arctic Express Dual shippers can be used as a canister and cane storage system indefinitely, with static holding times of up to 125 days
- Dual shippers hold six numbered, color-coded, stainless steel cans (included), which accommodate canes that hold ampoules
- Hard-shell shipping container comes standard for both Arctic Express and Arctic Express Dual shippers





Arctic Express LN₂ vapor shipping systems

| Model | Arctic Express 5 | Arctic Express 10 | Arctic Express 20 | Arctic Express IATA |
|--|--------------------------|--------------------------|--|---|
| Cat. No. | CY50915 | CY50905 | CY50910 | CY50920 |
| LN ₂ capacity (liters) | 1.5 | 4.3 | 10 | 10 |
| Canisters per unit | 1 | 1 | n/a | Internal security compartment |
| Canes per canister | 3 | 8 | 161 | n/a |
| 2 mL vials per cane | 3 | 6 | 6 | n/a |
| 2 mL vial capacity | 9 | 48 | 966 (bulk - 6 vials per cane) or 500 vials using 5 - 2" boxes (100-cell) | 400 vials using 4 - 2" boxes (100-cell) |
| Total straw capacity | 15 | 120 | 1610 | n/a |
| Static holding time (days) | 8 | 21 | 14 | 14 |
| Neck diameter: in. (cm) | 1.4 (3.5) | 2 (5.0) | 8.5 (21.6) | 8.5 (21.6) |
| Exterior dimensions: Diameter x height: in. (cm) | 7.3 x 13.5 (18.5 x 34.3) | 8.7 x 19.4 (22.1 x 49.3) | 15 x 23 (38.1 x 58.4) | 15 x 23 (38.1 x 58.4) |
| Shipping weight | 24 lbs./10.9 kg | 29 lbs./13.2 kg | 52 lbs./23.6 kg | 58 lbs. / 26.4 kg |

Arctic Express LN₂ vapor shipping systems

| Model | Arctic Express Dual 10 | Arctic Express Dual 19 | Arctic Express Dual 28 |
|--|---------------------------|---------------------------|-------------------------|
| Cat. No. | CK50920 | CK50921 | CK50922 |
| LN ₂ capacity (liters) | 10 | 18.5 | 28 |
| LN ₂ capacity-absorbed (liters) | 3 | 3 | 8 |
| Canisters per unit | 6 | 6 | 6 |
| Canes per canister | 5 | 6 | 21 |
| 2 mL vial capacity (6/cane) | 180 | 216 | 756 |
| Total straw capacity (10/cane) | 300 | 360 | 1260 |
| Static holding time—shipper (days) | 21 | 21 | 21 |
| Neck diameter: in. (cm) | 2 (5) | 2.2 (5.6) | 3.8 (9.7) |
| Exterior dimensions: Diameter x height: in. (cm) | 10.2 x 21.6 (25.9 x 54.9) | 14.5 x 25.7 (36.8 x 65.3) | 18.2 x 22 (46.2 x 55.9) |
| Shipping weight | 34 lbs. / 15.5 kg | 46 lbs. / 20.9 kg | 60 lbs. / 27.3 kg |

Thermo-Flask benchtop liquid nitrogen containers

Thermo Scientific™ Thermo-Flask™ liquid nitrogen containers feature inner vessels of borosilicate glass evacuated to 1×10^{-5} mm Hg. Available in stainless steel, and featuring vented clamped lids, carrying handles, and rubber-cushioned bases.

- Durable, corrosion-resistant stainless steel exterior
- Shallow wide-mouth design ideal for applications requiring flash freezing*
- Convenient dish-shaped design perfect for benchtop use
- “Push-fit” insulated lid, vented to prevent pressure build-up

Thermo-Flask benchtop liquid nitrogen containers

| Cat. No. | LN ₂ capacity (liters) | Inside neck diameter in. (cm) | Exterior dimensions diameter x height in. (cm) | Shipping weight |
|----------|-----------------------------------|-------------------------------|--|-----------------|
| 2129 | 1 | 5.1 (13) | 6.3 x 4.5 (16 x 11.4) | 8 lbs./3.6 kg |
| 2130 | 1.9 | 6.1 (15.5) | 7.3 x 5.4 (18.5 x 13.7) | 10 lbs./4.5 kg |
| 2122 | 1.01 | 3.4 (8.6) | 4.6 x 9 (11.7 x 22.9) | 6 lbs./2.7 kg |
| 2123 | 2.01 | 4.2 (10.7) | 5.6 x 10.6 (14.2 x 26.9) | 8 lbs./3.6 kg |
| 2124 | 4.51 | 5.9 (15) | 7.2 x 13.8 (18.3 x 35.1) | 10 lbs./4.5 kg |

Accessory

| Cat. No. | Description |
|----------|--------------|
| AY509X6 | 12 mL Dipper |



* The shallow wide-mouth flasks do not have lids. Only the flasks with handles have lids.



LN₂ supply tanks

All Thermo Scientific™ stainless steel LN₂ supply tanks are rated at 22 psi (1.5 bar).

LN₂ supply tanks

| Cat. No. | LN ₂ capacity (liters) | Casters | Static evaporation rate (per day) | Exterior dimensions (diameter x height) in. (cm) | Shipping weight |
|----------|-----------------------------------|----------|-----------------------------------|--|-------------------|
| 8127 | 50 | standard | 4% | 16 x 41 (40.6 x 104.1) | 136 lbs. / 62 kg |
| 8127CE* | | | | | |
| 8120TF | 180 | n/a | 2% | 20 x 63.3 (50.8 x 161.3) | 326 lbs. / 148 kg |
| 8120CE* | | | | | |
| 8121 | 230 | standard | 2% | 26.0 x 54.8 (66 x 139.2) | 425 lbs. / 193 kg |
| 8121CE* | | | | | |

Tank rating for all models: 22 psi (1.5 bar)

* Outside North America.

LN₂ supply tank accessories

| Description | 8127 / 8127CE | 8120TF / 8120CE | 8121 / 8121CE |
|--|---------------|-----------------|---|
| Cylinder roller base for use with 8120/8120CE measures 22 x 3.5 x 30 in. (55.9 x 8.9 x 76.2 cm) | N/A | 4000175 | N/A — 8121/8121CE has built-in casters and fold-down handle |
| Cylinder hand truck with pneumatic wheels for use with 8120/8120CE | N/A | 4000173 | N/A — 8121/8121CE has built-in casters and fold-down handle |
| 6 ft. flexible braided stainless steel transfer hose with 1/2", 45 degree flare fittings on each end | | | 4000401 |
| 4 ft. flexible braided stainless steel transfer hose with 1/2", 45 degree flare fittings on each end | | | 4000400 |
| LN ₂ fill phase separator | | | 4000571 |

Cryopreservation accessories



- | | | | |
|-----------------------------|-----------------------------------|---|--------------------------------|
| 1 Cell dividers | 5 LN ₂ measuring stick | 8 CryoSleeve holders with optional cane | 13 Sensaphone dialing system |
| 2 Square box with hole | 6 CryoClaw ampoule remover | 9 Cryo markers | 14 Low-level alarm with sensor |
| 3 Rectangular cardboard box | 7 Cryo gloves | 10 T-valve assembly | 15 Flexible metal hose |
| 4 Polycarbonate boxes | | 11 Phase separator | |
| | | 12 Tongs | |

| Cryo vials | |
|--|----------|
| Each Nalgene vial is constructed of sterile polypropylene with a white marking area and includes a screw cap | |
| 1.2 mL, self-standing, conical interior bottom, silicone washer, one case of 500 | AY509X13 |
| 2.0 mL, self-standing, round interior bottom, silicone washer, case of 500 | AY509X12 |
| 5.0 mL, round bottom, silicone washer, one case of 500 | 4000208 |
| Cryo vial color-coding caps | |
| Nalgene Rainbow (assortment of all colors), one case of 400 | 4000389 |
| Cryo boxes | |
| Individual | |
| 2.0 in. (5.1 cm) rectangular cardboard box, includes a 40-cell divider (for CryoPlus models) | 4000189 |
| 2.0 in. (5.1 cm) square stainless steel box, does not include a 100-cell divider | 4000238 |
| 2.0 in. (5.1 cm) square cardboard box, includes a 100-cell divider (for CryoPlus models) | 4000014 |
| 2.75 in. (7.0 cm) square cardboard box, does not include a 25-cell divider (for CryoPlus models) | 189470 |
| 3.0 in. (7.6 cm) square cardboard box, includes a 100-cell divider (for CryoPlus models) | 4000015 |
| 2.0 in. (5.1 cm) high Nalgene polycarbonate box with 100-cell divider, includes a numerical grid system printed on the cover | 820010 |
| 2.0 in. (5.1 cm) high Nalgene polycarbonate box with 81-cell divider, includes a numerical grid system printed on the cover | 820011 |
| 3.0 in. (5.1 cm) high Nalgene polycarbonate box with 81-cell divider, includes a numerical grid system printed on the cover | 820013 |
| Pack of 12 multiple-colored 2" (5 cm) high fiberboard boxes. Dividers sold separately. No drain holes, for vapor-phase only. | 1950878 |
| Pack of 12 pink 2" (5 cm) high-fiberboard boxes. Dividers sold separately. No drain holes, for vapor-phase only. | 1950879 |
| Pack of 12 red 2" (5 cm) high-fiberboard boxes. Dividers sold separately. No drain holes, for vapor-phase only. | 1950880 |
| Pack of 12 yellow 2" (5 cm) high-fiberboard boxes. Dividers sold separately. No drain holes, for vapor-phase only. | 1950881 |
| Pack of 12 green 2" (5 cm) high-fiberboard boxes. Dividers sold separately. No drain holes, for vapor-phase only. | 1950882 |
| Pack of 12 blue 2" (5 cm) high-fiberboard boxes. Dividers sold separately. No drain holes, for vapor-phase only. | 1950883 |
| Pack of 12 black 2" (5 cm) high-fiberboard boxes. Dividers sold separately. No drain holes, for vapor-phase only. | 1950884 |
| Dividers | |
| Cardboard 100-cell divider | 4000013 |
| Cardboard 40-cell divider | 4000174 |
| Cardboard 25-cell divider | 189387 |
| Canes | |
| One cane, 1.2 mL—6 ampoule | 4000211 |
| One aluminum cane for storage of any 12.5 mm diameter cryo tubes | 4000217 |
| One aluminum cane for 9.2 mL and 10.0 mL goblets | 4000216 |
| CryoSleeve vial holders | |
| Polyvinyl sleeve, 0.6 in. (1.5 cm) interior diameter, 10.8 in. (27.4 cm) long, one case of 100 | 4000218 |
| Tongs | |
| Transport vials from freezing racks to boxes | |
| Stainless steel cryo tongs | 4000388 |
| Claws | |
| Retrieve fallen object in the LN₂ vessels | |

| Description | Cat. No. |
|---|----------|
| CryoClaw | AY509X18 |
| Replacement suction cups for CryoClaw | AY509X19 |
| Measuring stick | |
| LN ₂ Measuring Stick | 180143 |
| Gloves (waterproof cryo) | |
| Mid-arm, 14.0 in. to 15.0 in. (35.6 cm to 38.1 cm) | |
| Small | 189441 |
| Medium | 189442 |
| Large | 189443 |
| Elbow-length, 18.0 in. to 20.0 in. (45.7 cm to 50.8 cm) | |
| Medium | 189445 |
| Large | 189446 |
| Extra-Large | 189447 |
| Shoulder-length, 28.0 in. (71.1 cm) | |
| Medium | 189448 |
| Large | 189449 |
| Extra-Large | 189450 |
| Aprons | |
| Small, 36.0 in. W (91.4 cm) | 189451 |
| Medium, 42.0 in. W (106.7 cm) | 189452 |
| Large, 48.0 in. W (121.9 cm) | 189453 |
| Cryo marker pens | |
| Fine tip, fast-drying, non-smearing, permanent ink; recommended for all Cryogenic vials at -200C (-328F). | |
| Black, blue, green, and red, set of 4 | 4000221 |
| Black, set of 4 | 4000222 |
| LN₂ transfer hoses and phase separator | |
| 4.0 ft. (1.2 m) flexible metal hose, 1/2 in., 45° flare, swivel ends | 4000400 |
| 6.0 ft. (1.8 m) flexible metal hose, 1/2 in., 45° flare, swivel ends | 4000401 |
| Phase separator, 1.3 in. (3.3 cm) diameter x 3.0 in. (7.6 cm) long x 1/4 in. FPT | 4000571 |
| Low-level alarm | |
| Low-level alarm (90-240) with sensor for any standard-sized LN ₂ container, includes dry contacts for remote alarm | 8130 |
| Sensaphone dialing systems | |
| 4 pre-programmed numbers, 120V 60 Hz | 400047 |
| 4 pre-programmed numbers, 220V 50 Hz | 400182 |
| 8 pre-programmed numbers, 120V 60 Hz | 400134 |
| 8 pre-programmed numbers, 220V 50 Hz | 400183 |
| T-valve assembly | |
| T-valve assembly with fittings, used to connect two transfer hoses to a supply tank | 4000290 |
| LN₂ tank switcher | |
| For use with CryoExtra or CryoPlus systems. CryoPlus system requires hot gas bypass in order to use tank switcher. | CE8100TS |

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