



# CryoMed Controlled-Rate Freezer

Repeatable freezing performance for your  
discovery and production needs

General Purpose

# Dependable sample protection

In order to maintain cellular viability during the freezing process, certain cells – such as protist, mammalian, and plant cells – require precise control of the freezing rate in order to minimize the detrimental effects of undercooling and the heat liberated during the phase change process from water to ice. The Thermo Scientific™ CryoMed™ Controlled-Rate Freezers (CRFs) are designed with reliability, protection, and data traceability in mind for your sample preparation and GMP production needs.

For customers in research, cell and gene therapy, vaccine production, and biobanking, the CryoMed CRF provides precise, repeatable freezing results that protect the sample from intracellular freezing. The CryoMed CRF provides enhanced data traceability via a touchscreen user interface and offers customizable freezing profiles while supporting 21 CFR part 11 and GMP needs.



# CryoMed Controlled-Rate Freezer

## User-friendly operation with enhanced data traceability

- Intuitive touchscreen display allows for easy set-up, operation, and review of a freezing run
- Six pre-set 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: 3 levels of user accessibility
- USB data export of .pdf file run logs support 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 to 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

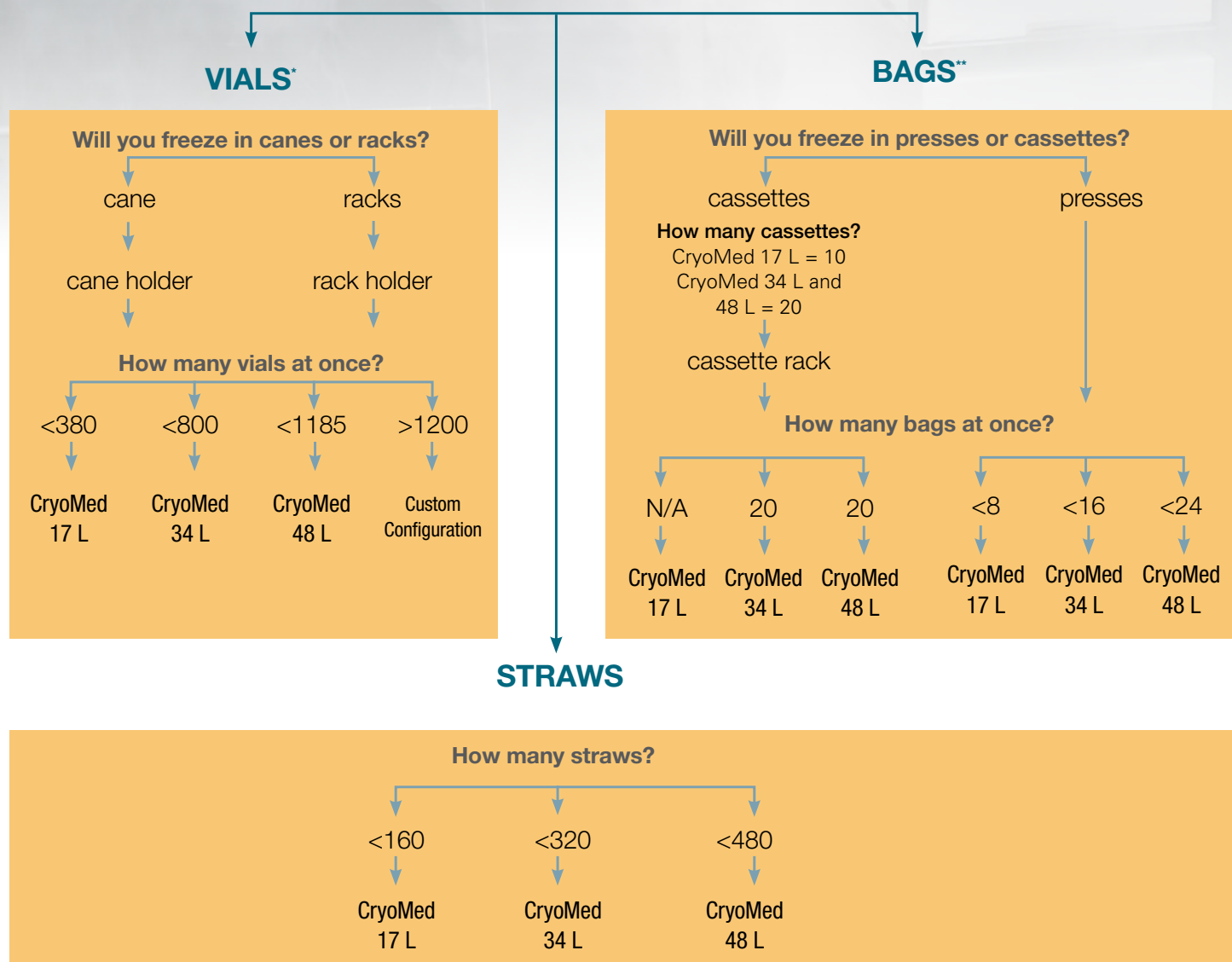
## Reliable temperature performance for high-throughput usage

- Dual solenoid valves are designed to balance LN<sub>2</sub> injection volume for precise temperature control and accelerated freezing
- Preventative maintenance indicator for LN<sub>2</sub> 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

# Specifications and ordering information

## CryoMed Controlled-Rate Freezers

| Electrical         | Plug type  | Chamber volume          | Printer/<br>no printer   | Temp. Range     | Exterior dimensions<br>WxHxD (in./cm)     | Interior dimensions<br>WxHxD (in./cm) | Product weight<br>(lbs/kg) | LN <sub>2</sub> and utility                                                                                                                                                  | Cat. No. |
|--------------------|------------|-------------------------|--------------------------|-----------------|-------------------------------------------|---------------------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 120 V/60 Hz        | NEMA 5-15P | 17 L<br>(0.6 cu. ft.)   | No thermal printer       | +50°C to -180°C | 37.3 x 21.7 x 24.3<br>(94.7 x 55.1 x 61)  | 7 x 12 x 13<br>(17.8 x 30.5 x 33)     | 154 lbs.<br>(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 50/60 Hz | CEE 7/7    |                         |                          |                 |                                           |                                       |                            |                                                                                                                                                                              | TSCM17XV |
| 100 V 50/60 Hz     | NEMA 5-15P |                         |                          |                 |                                           |                                       |                            |                                                                                                                                                                              | TSCM17XL |
| 120 V/60 Hz        | NEMA 5-15P | 34 L<br>(1.2 cu. ft.)   |                          |                 | 43.3 x 21.7 x 24.3<br>(109.9 x 55.1 x 61) | 13 x 12 x 13<br>(33 x 30.5 x 33)      | 174 lbs.<br>(78.9 kg)      |                                                                                                                                                                              | 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<br>(1.7 cu. ft.) |                          |                 | 49.3 x 21.7 x 24.3<br>(125.2 x 55.1 x 61) | 19 x 12 x 13<br>(48.3 x 30.5 x 33)    | 191 lbs.<br>(86.6 kg)      |                                                                                                                                                                              | 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<br>(0.6 cu. ft.)   | Built-in thermal printer |                 | 37.3 x 21.7 x 24.3<br>(94.7 x 55.1 x 61)  | 7 x 12 x 13<br>(17.8 x 30.5 x 33)     | 155 lbs.<br>(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<br>(1.2 cu. ft.)   |                          |                 | 43.3 x 21.7 x 24.3<br>(109.9 x 55.1 x 61) | 13 x 12 x 13<br>(33 x 30.5 x 33)      | 175 lbs.<br>(79.3 kg)      |                                                                                                                                                                              | 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<br>(1.7 cu. ft.) |                          |                 | 49.3 x 21.7 x 24.3<br>(125.2 x 55.1 x 61) | 19 x 12 x 13<br>(48.3 x 30.5 x 33)    | 192 lbs.<br>(87 kg)        |                                                                                                                                                                              | TSCM48PA |
| 220-230 V 50/60 Hz | CEE 7/7    |                         |                          |                 |                                           |                                       |                            |                                                                                                                                                                              | TSCM48PV |
| 100 V 50/60 Hz     | NEMA 5-15P |                         |                          |                 |                                           |                                       |                            |                                                                                                                                                                              | TSCM48PL |

## CryoMed Freezing Presses

| Image                                                                             | Description                                                                              | Dimensions<br>WxD<br>(in./cm) | Storage                    | CryoMed<br>0.6 cu. ft. | CryoMed<br>1.2 cu. ft. | CryoMed<br>1.7 cu. ft. | Cat. No. |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------|----------------------------|------------------------|------------------------|------------------------|----------|
|  | Bag press for 250 mL bag (Fenwal 4R5461 or OriGen CryoSure 250)                          | 5.9 x 9<br>(15 x 22.9)        | Presses per chamber        | 4                      | 8                      | 12                     | 4000314  |
|                                                                                   |                                                                                          |                               | Bags per press             | 2                      | 2                      | 2                      |          |
|                                                                                   |                                                                                          |                               | Total # - bags per chamber | 8                      | 16                     | 24                     |          |
|  | Bag press for 200 mL bag (Gambro DF-200 or CryoMacs 50 and 250)                          | 8 x 8.5<br>(20.3 x 21.6)      | Presses per chamber        | N/A                    | 4                      | 8                      | 4000316  |
|                                                                                   |                                                                                          |                               | Bags per press             | N/A                    | 2                      | 2                      |          |
|                                                                                   |                                                                                          |                               | Total # - bags per chamber | N/A                    | 8                      | 16                     |          |
|  | Bag press for Delmed™ 2030-2                                                             | 8.8 x 12<br>(22.4 x 30.5)     | Presses per chamber        | N/A                    | 4                      | 8                      | 4000317  |
|                                                                                   |                                                                                          |                               | Bags per press             | N/A                    | 4                      | 4                      |          |
|                                                                                   |                                                                                          |                               | Total # - bags per chamber | N/A                    | 16                     | 32                     |          |
|  | Bag press for 250 mL bag (Fenwal 4R5461 or OriGen CryoSure 250)                          | 9 x 12<br>(22.9 x 30.5)       | Presses per chamber        | N/A                    | 4                      | 8                      | 4000318  |
|                                                                                   |                                                                                          |                               | Bags per press             | N/A                    | 4                      | 4                      |          |
|                                                                                   |                                                                                          |                               | Total # - bags per chamber | N/A                    | 16                     | 32                     |          |
|  | Bag press for 200 mL bag (Gambro DF-200 or equivalent)                                   | 9 x 12<br>(22.9 x 30.5)       | Presses per chamber        | N/A                    | 4                      | 8                      | 4000320  |
|                                                                                   |                                                                                          |                               | Bags per press             | N/A                    | 4                      | 4                      |          |
|                                                                                   |                                                                                          |                               | Total # - bags per chamber | N/A                    | 16                     | 32                     |          |
|  | Bag press for 700 mL bag (Gambro DF-700 or equivalent)                                   | 8 x 12<br>(20.3 x 30.5)       | Presses per chamber        | N/A                    | 4                      | 8                      | 4000321  |
|                                                                                   |                                                                                          |                               | Bags per press             | N/A                    | 2                      | 2                      |          |
|                                                                                   |                                                                                          |                               | Total # - bags per chamber | N/A                    | 8                      | 16                     |          |
|  | Bag press for 500 mL bag (Fenwal 4R5462 or CryoMacs 500 and 750 and OriGen CryoSure 500) | 6 x 10.3<br>(15.2 x 26.2)     | Presses per chamber        | 4                      | 6                      | 12                     | 4000555  |
|                                                                                   |                                                                                          |                               | Bags per press             | 2                      | 2                      | 2                      |          |
|                                                                                   |                                                                                          |                               | Total # - bags per chamber | 8                      | 12                     | 24                     |          |

**CryoMed Freezing Racks and Rack Holders**

| Image                                                                               | Description                                                                                 | Dimensions<br>HxWxD (in./cm)                        | Storage                          | CryoMed<br>17 L | CryoMed<br>34 L | CryoMed<br>48 L | Cat. No. |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------|----------------------------------|-----------------|-----------------|-----------------|----------|
|    | Straw rack for .25/.5mL straws - holds 40 straws                                            | 11.3 x 3 x 5.25<br>(28.7 x 7.6 x 13.3)              | Racks per chamber                | 4               | 8               | 12              | 4000294  |
|                                                                                     |                                                                                             |                                                     | Straws per rack                  | 40              | 40              | 40              |          |
|                                                                                     |                                                                                             |                                                     | Total # straws per chamber       | 160             | 320             | 480             |          |
|    | Cane freezing rack - large                                                                  | 11 x 12 x 12<br>(28 x 30.5 x 30.5)                  | Racks per chamber                | N/A             | 1               | 1 lrg & 1 sm    | 4000303  |
|                                                                                     |                                                                                             |                                                     | Canes per rack                   | N/A             | 162             | 162 & 77        |          |
|                                                                                     |                                                                                             |                                                     | Vials (2 mL) per cane            | N/A             | 5               | 5               |          |
|                                                                                     |                                                                                             |                                                     | Total # vials per chamber        | N/A             | 810             | 1,195           |          |
|    | Cane freezing rack - small                                                                  | 11 x 6 x 12<br>(28 x 15.2 x 30.5)                   | Racks per chamber                | 1               | N/A             | 1 lrg & 1 sm    | 4000700  |
|                                                                                     |                                                                                             |                                                     | Canes per rack                   | 77              | N/A             | 162 & 77        |          |
|                                                                                     |                                                                                             |                                                     | Vials (2 mL) per cane            | 5               | N/A             | 5               |          |
|                                                                                     |                                                                                             |                                                     | Total # vials per chamber        | 385             | N/A             | 1195            |          |
|    | 1.2/2 mL freezing rack - small<br>(order qty 5 each when ordering with 4000702 rack holder) | 1.1 x 6 x 12<br>(2.8 x 15.2 x 30.5)                 | Racks per chamber                | 5               | N/A             | 5 lrg & 5 sm    | 4000701  |
|                                                                                     |                                                                                             |                                                     | Vials per rack                   | 76              | N/A             | 161 & 76        |          |
|                                                                                     |                                                                                             |                                                     | Total # vials per chamber        | 380             | N/A             | 1,185           |          |
|    | Small rack holder for 4000701 racks                                                         | 9.8 x 6.2 x 12.4<br>(24.9 x 15.7 x 31.5)            | Rack holders per chamber         | 1               | N/A             | 1 lrg & 1 sm    | 4000702  |
|                                                                                     |                                                                                             |                                                     | Racks per rack holder            | 5               | N/A             | 5 & 5           |          |
|                                                                                     |                                                                                             |                                                     | Total # racks per chamber        | 5               | N/A             | 10              |          |
|    | 1.2/2 mL freezing rack - large<br>(order qty 5 each when ordering with 4000704 rack holder) | 1.1 x 12 x 12<br>(2.8 x 30.5 x 30.5)                | Racks per chamber                | N/A             | 5               | 5 lrg & 5 sm    | 4000703  |
|                                                                                     |                                                                                             |                                                     | Vials per rack                   | N/A             | 161             | 161 & 76        |          |
|                                                                                     |                                                                                             |                                                     | Total # vials per chamber        | N/A             | 805             | 1,185           |          |
|   | Large rack holder for 4000703 racks                                                         | 9.8 x 12.2 x 12.4<br>(24.9 x 31 x 31.5)             | Rack holders per chamber         | N/A             | 1               | 1 lrg & 1 sm    | 4000704  |
|                                                                                     |                                                                                             |                                                     | Racks per rack holder            | N/A             | 5               | 5 & 5           |          |
|                                                                                     |                                                                                             |                                                     | Total # racks per chamber        | N/A             | 5               | 10              |          |
|  | 4 or 5 mL freezing rack- small (order qty 3 each when ordering with 4000706 rack holder)    | 2.6 x 6 x 12<br>(6.6 x 15.2 x 30.5)                 | Racks per chamber                | 3               | N/A             | 3 lrg & 1 sm    | 4000705  |
|                                                                                     |                                                                                             |                                                     | Vials per rack                   | 76              | N/A             | 161 & 76        |          |
|                                                                                     |                                                                                             |                                                     | Total # vials per chamber        | 228             | N/A             | 711             |          |
|  | Small rackholder for 4000705 racks                                                          | 8.1 x 6.2 x 12.4<br>(20.6 x 15.7 x 31.5)            | Rack holders per chamber         | 1               | N/A             | 1 lrg & 1 sm    | 4000706  |
|                                                                                     |                                                                                             |                                                     | Racks per rack holder            | 3               | N/A             | 3 & 3           |          |
|                                                                                     |                                                                                             |                                                     | Total # racks per chamber        | 3               | N/A             | 6               |          |
|  | 4 or 5 mL freezing rack - large (order qty 3 each when ordering with 4000708 rack holder)   | 8.1 x 12.2 x 12.4<br>(20.6 x 31 x 31.5)             | Racks per chamber                | N/A             | 3               | 3 lrg & 3 sm    | 4000707  |
|                                                                                     |                                                                                             |                                                     | Vials per rack                   | N/A             | 161             | 161 & 76        |          |
|                                                                                     |                                                                                             |                                                     | Total # vials per chamber        | N/A             | 483             | 711             |          |
|  | Large rack holder for 4000707 racks                                                         | 8.1 x 12.2 x 12.4<br>(20.6 x 31 x 31.5)             | Rack holders per chamber         | N/A             | 1               | 1 lrg & 1 sm    | 4000708  |
|                                                                                     |                                                                                             |                                                     | Racks per rack holder            | N/A             | 3               | 3 & 3           |          |
|                                                                                     |                                                                                             |                                                     | Total # racks per chamber        | N/A             | 3               | 6               |          |
|  | Two level skin rack (holds skin packets measuring 5 x 7 in.)                                | 10.5 x 6.2 x 12.6<br>(26.7 x 15.7 x 32)             | Rack holders per chamber         | 1               | 2               | 3               | 4000310  |
|                                                                                     |                                                                                             |                                                     | Skin packets per rack            | 48              | 48              | 48              |          |
|                                                                                     |                                                                                             |                                                     | Total # skin packets per chamber | 48              | 96              | 144             |          |
|  | One level skin rack (holds skin packets measuring 5 x 7 in.)                                | 5.2 x 6.2 x 12.6<br>(13.2 x 15.7 x 32)              | Rack holders per chamber         | 2               | 4               | 6               | 4000312  |
|                                                                                     |                                                                                             |                                                     | Skin packets per rack            | 24              | 24              | 24              |          |
|                                                                                     |                                                                                             |                                                     | Total # skin packets per chamber | 48              | 96              | 96              |          |
|  | Cord blood freezing rack for 50mL cannisters (4000610)                                      | 11 x 4 x 5<br>(28 x 10.2 x 12.7)                    | Rack holders per chamber         | 3               | 6               | 9               | 4000340  |
|                                                                                     |                                                                                             |                                                     | Canisters per rack               | 10              | 10              | 10              |          |
|                                                                                     |                                                                                             |                                                     | Total # canisters per chamber    | 30              | 60              | 90              |          |
|  | Adjustable freezing rack for canisters                                                      | 11.6 x 5.5 to 7.5 x 8.2<br>(29.5 x 14 to 19 x 20.8) | Rack holders per chamber         | N/A             | 2               | 2               | 185089   |
|                                                                                     |                                                                                             |                                                     | Canisters per rack               | N/A             | 10              | 10              |          |
|                                                                                     |                                                                                             |                                                     | Total # canisters per chamber    | N/A             | 20              | 20              |          |

## CryoMed Sample Sensors

| Description                               |                        | Cat. No.               |                        |  |
|-------------------------------------------|------------------------|------------------------|------------------------|--|
| Product description                       | CryoMed<br>0.6 cu. ft. | CryoMed<br>1.2 cu. ft. | CryoMed<br>1.7 cu. ft. |  |
| 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                |                        |                        |  |

## CryoMed Canisters for Freezing Racks

| Bag Type/Size                                           | Description                       | Dimensions LxWxD<br>(in./cm)       | Cat. No. |
|---------------------------------------------------------|-----------------------------------|------------------------------------|----------|
| Pall MEDSEP™ 25 mL, OriGen CS 25, or equivalent         | Swing arm canister for 25 mL bag  | 3.6 x 3.9 x 0.4 (9.14 x 9.4 x 1)   | 1950831  |
| Fenwal 4R9951, OriGen CS 50, or equivalent              | Swing arm canister for 50 mL bag  | 3.7 x 6.3 x 0.5 (9.4 x 16 x 1.3)   | 4000610  |
| Gambro DF-200 or CryoMacs 50 and 250                    | Swing arm canister for 200 mL bag | 6.4 x 7.8 x 0.8 (16.3 x 19.1 x 2)  | 4000356  |
| Gambro DF-700, OriGen CS 1000, or CryoMacs 750 and 1000 | Swing arm canister for 700 mL bag | 6.5 x 12.1 x 0.8 (16.5 x 30.7 x 2) | 4000357  |
| Fenwal 4R5461, OriGen CS 25, CryoMacs 50 and 250        | Sliding canister for 250 mL bag   | 5.5 x 7.6 x 0.4 (14 x 19.3 x 1)    | 4000335  |
| Fenwal 4R5462, OriGen CS 500, or equivalent             | Sliding canister for 500 mL bag   | 5.6 x 9.2 x 0.4 (14.2 x 23.4 x 1)  | 4000336  |
| Gambro DF-200 or equivalent                             | Sliding canister for 200 mL bag   | 6.4 x 7.8 x 0.8 (16.3 x 19.1 x 2)  | 4000332  |
| Gambro DF-700, OriGen CS 1000, or CryoMacs 750 and 1000 | Sliding canister for 700 mL bag   | 6.5 x 11.8 x 0.8 (16.5 x 30 x 2)   | 4000333  |

## CryoMed Printer Paper

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

## CryoMed Documents

| Description                                 | Cat. No. |
|---------------------------------------------|----------|
| Certification of Compliance (Unit Specific) | 260049   |
| Temperature Mapping                         | 260045   |
| Certificate of Conformance                  | 260043   |

Find out more at [thermofisher.com/cold](https://thermofisher.com/cold)