CryoMed Controlled-Rate Freezer with OPC UA, General Purpose

Optimal freezing and protection

Thermo Scientific™ CryoMed™ Controlled-Rate Freezers with OPC UA, General Purpose offer customizable freezing profiles and enable precise, repeatable freezing results to help protect precious samples from intracellular ice formations. Once frozen, samples can be placed into long-term Cryogenic storage or shipped with cryo transport solutions.

Open Platform Communication Unified Architecture (OPC™ UA) is a platform-independent, open industry standard for connectivity that enables machine-to-machine communication and information integration between various devices, software systems, and applications, including the Gibco™ CTS™ Cellmation™ Software for the Emerson™ DeltaV™ Distributed Control System (DCS), which helps simplify the management of the entire cell therapy workflow.

21 CFR Part 11–compliance and GMP needs are supported by enabling the use of electronic records and signatures during the manufacturing process, that may help improve operational efficiency, improve system security, and decrease the number of records with defects.

Supporting audit requirements, the CryoMed Controlled-Rate Freezer (CRF) with OPC UA comes with enhanced data traceability features, helping users trace data across the entire workflow.

Real-time run monitoring enables superior levels of sample protection, workflow efficiencies, asset and cost optimization, and regulatory compliance.

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The CryoMed Controlled-Rate Freezer is now compatible with OPC UA

Enabling digital automation for your cell therapy workflow

OPC UA is a platform-independent specification that provides interoperability through multiple supported protocol bindings, communication models, and information models. This allows the latest CryoMed CRF to work directly with other Thermo Fisher devices operating in Gibco CTS Cellmation software, like the Thermo Scientific™ Heracell™ Vios Incubators.

It also enables CryoMed devices to operate in other environments utilizing the OPC UA specification, like Distributed Control Systems (DCS), Manufacturing Execution Systems (MES), Supervisory Control and Data Acquisition (SCADA) systems, and more.

Integrating a CryoMed device into your lab's monitoring and control application can help improve your overall efficiency and increase your workflow capabilities.

OPC UA can function on the following platforms and operating systems:

- Hardware platforms: traditional PC hardware, cloud-based servers, PLCs, microcontrollers

- Operating systems: Microsoft™ Windows™, Apple® OS X®, Android™, or any distribution of Linux®

Added benefits of OPC UA when used with secure platform systems, such as DCS':

- **Data management**: a standardized framework for organizing and managing lab data, enabling lab managers and researchers to access and analyse data from different sources more easily

- **Reliability**: OPC UA is a highly reliable communication protocol that aims to ensure data is transmitted accurately and in a timely manner, reducing the likelihood of errors and system downtime

- **Scalability**: can be scaled to accommodate large and complex manufacturing systems, making it suitable for use in a wide range of applications

How it works

CryoMed CRF with OPC UA

Once connected via an RJ45 cable, the CryoMed CRF supports OPC UA protocol, enabling communication across multiple operating systems and hardware platforms through any secure DCS, MES or SCADA system.

DCS, MES or SCADA systems

Secure DCS', MES' or SCADA systems can provide tools that offer decision integrity to help users run their lab at its full potential. When used in parallel with OPC UA, platform systems such as the DeltaV DCS, can securely share data to leverage the benefits of cloud analytics, remote monitoring solutions and third-party technologies.

Front-end software
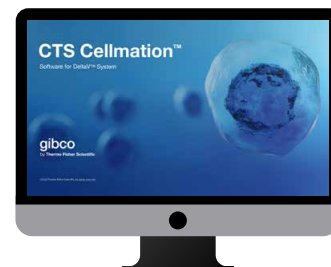
A 21 CFR part 11 compliant front-end software, such as the Thermo Fisher Scientific Gibco CTS Cellmation software, allows users to connect their Thermo Fisher cell therapy instruments within a common DSC network to control and monitor workflows across multiple instruments.

- Securely share data
- Be audit-ready
- Track instruments performance
- Manage the entire workflow
- Save on operational costs
- Minimize risks in your research

Order details

CryoMed Controlled-Rate Freezer with OPC UA - General Purpose

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	LN$_2$ and utility connection	Electrical	Plug type	Cat. No.
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	120V/60Hz	NEMA 5-15P	TSCM17SA
							220V/50Hz	CEE 7/7	TSCM17SV
34 L (1.2 cu. ft.)			43.3 x 21.7 x 24.3 (109.9 x 55.1 x 61)	13 x 12 x 13 (33 x 30.5 x 33)	174 lbs. (78.9 kg)		120V/60Hz	NEMA 5-15P	TSCM34SA
							220V/50Hz	CEE 7/7	TSCM34SV
48.1 L (1.7 cu. ft.)			49.3 x 21.7 x 24.3 (125.2 x 55.1 x 61)	19 x 12 x 13 (48.3 x 30.5 x 33)	191 lbs. (86.6 kg)		120V/60Hz	NEMA 5-15P	TSCM48SA
							220V/50Hz	CEE 7/7	TSCM48SV
17 L (0.6 cu. ft.)	Built-in thermal printer		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)		120V/60Hz	NEMA 5-15P	TSCM17FA
							220V/50Hz	CEE 7/7	TSCM17FV
34 L (1.2 cu. ft.)			43.3 x 21.7 x 24.3 (109.9 x 55.1 x 61)	13 x 12 x 13 (33 x 30.5 x 33)	175 lbs. (79.3 kg)		120V/60Hz	NEMA 5-15P	TSCM34FA
							220V/50Hz	CEE 7/7	TSCM34FV
48.1 L (1.7 cu. ft.)			49.3 x 21.7 x 24.3 (125.2 x 55.1 x 61)	19 x 12 x 13 (48.3 x 30.5 x 33)	192 lbs. (87 kg)		120V/60Hz	NEMA 5-15P	TSCM48FA
							220V/50Hz	CEE 7/7	TSCM48FV

CryoMed CRF sensors

Description	Cat. No.		
Product description	CryoMed 17L	CryoMed 34L	CryoMed 48L
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 CRF racks

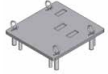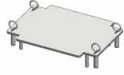| Image	Description	Holds	Type	Cat. No.
	More flexibility for your controlled-rate freezing applications with Thermo Scientific™ Racks for the CryoMed™ Controlled-Rate Freezer	Adustable, 10-position	Canister rack	185089

CryoMed CRF canisters for freezing racks

Bag type/size	Description	Dimensions L x W x D (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, or 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 CRF printer paper

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

CryoMed CRF bag freezing presses

Image	Description	Dimensions W x D (in./cm)	Storage	CryoMed 17L	CryoMed 34L	CryoMed 48L	Cat. No.
	Bag press for 250 mL bag (Fenwal 4R5461 or OriGen CryoStore 250)	5.9 x 9 (15 x 22.9)	Presses per chamber	4	8	12	4000314
			Bags per press	2	2	2	
			Total no. bags per chamber	8	16	24	
	Bag press for 200 mL bag (Gambro DF-200 or CryoMACS 50 and 250)	8 x 8.5 (20.3 x 21.6)	Presses per chamber	N/A	4	8	4000316
			Bags per press	N/A	2	2	
			Total no. bags per chamber	N/A	8	16	
	Bag press for Delmed 2030-2	8.8 x 12 (22.4 x 30.5)	Presses per chamber	N/A	4	8	4000317
			Bags per press	N/A	4	4	
			Total no. bags per chamber	N/A	16	32	
	Bag press for 250 mL bag (Fenwal 4R5461 or CryoStore 250)	9 x 12 (22.9 x 30.5)	Presses per chamber	N/A	4	8	4000318
			Bags per press	N/A	4	4	
			Total no. bags per chamber	N/A	16	32	
	Bag press for 200 mL bag (Gambro DF-200 or equivalent)	9 x 12 (22.9 x 30.5)	Presses per chamber	N/A	4	8	4000320
			Bags per press	N/A	4	4	
			Total no. bags per chamber	N/A	16	32	
	Bag press for 700 mL bag (Gambro DF-700 or equivalent)	8 x 12 (20.3 x 30.5)	Presses per chamber	N/A	4	8	4000321
			Bags per press	N/A	2	2	
			Total no. bags per chamber	N/A	8	16	
	Bag press for 500 mL bag (Fenwal 4R5462 or CryoMACS 500 and 750, CryoStore 500)	6 x 10.3 (15.2 x 26.2)	Presses per chamber	4	6	12	4000555
			Bags per press	2	2	2	
			Total no. bags per chamber	8	12	24	
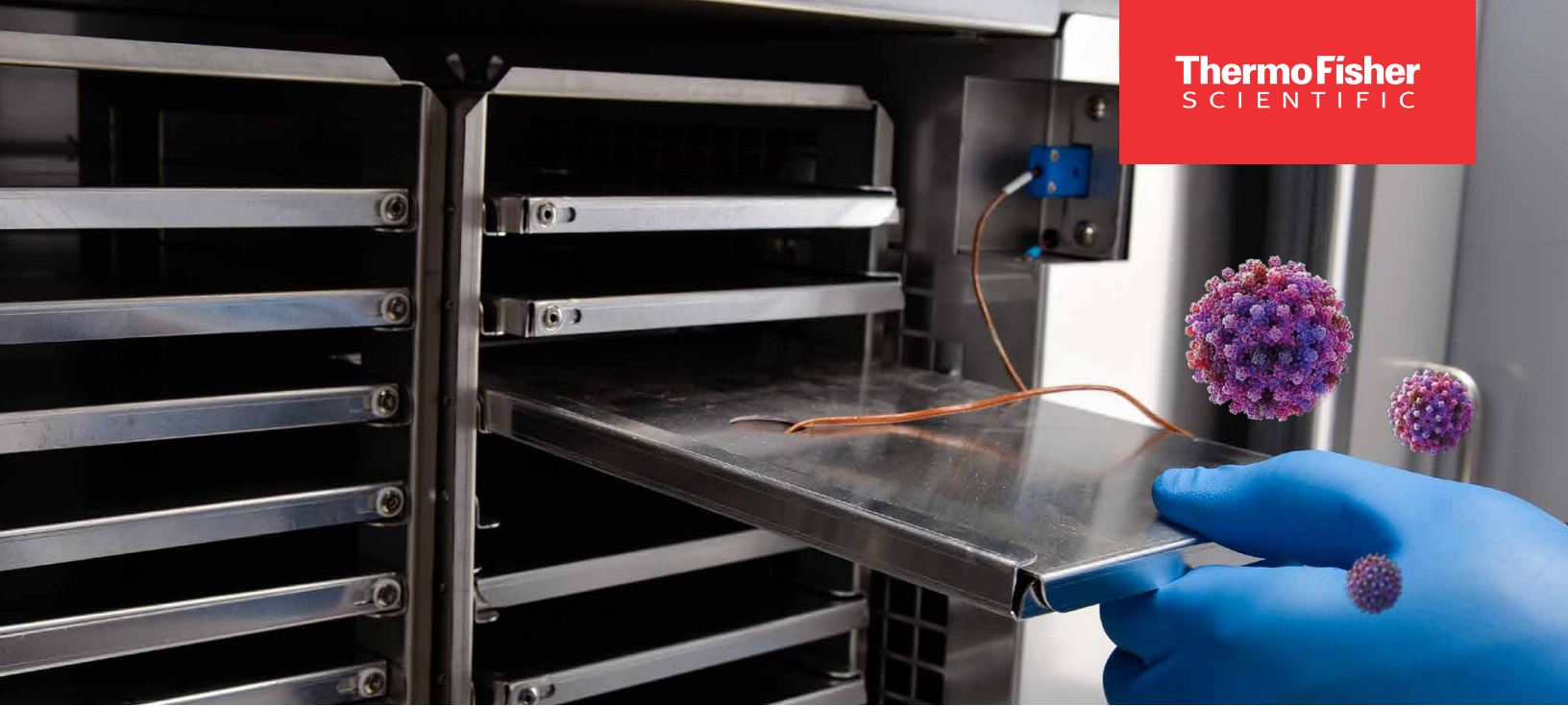
CryoMed CRF compliance services

Qualification/service	Overview of qualification/service	Description	Cat. No.
Installation qualification (IQ)[2]	• Verifies that the equipment, manuals, supplies, and any other accessories arrived undamaged as specified in the sales order; verifies equipment and any other accessories are assembled and installed • Verifies that the installation site and equipment environment meet manufacturer-specified environmental requirements"	On-site IQ/OQ service	IOQP003507
Operation qualification (OQ)	• Detailed configuration information for each system component has been recorded (as applicable) • Verifies important equipment functions and ensures that the equipment operates as expected by the manufacturer and in conformance with standards and requirements • 2 point temperature verification performed on chamber and sample readings (as per purchased configuration) • Key tests: Power failure and temperature alerts"		
Temperature mapping	• Identifies temperature variations across the chamber space • Temp map test: Manufacturing performance specifications verified via a multi point temperature mapping with recommended test profile and probe configuration"	On-site IQ/OQ + temperature mapping service	IOTQP003507
		On-site temperature mapping service	TEMPMAP
Calibration[1]	• Periodic verification that equipment is producing accurate results within specified limits compared to traceable standards of measurement	Temperature calibration ISO 17025	Contact your local sales or service representative for more information
		Temperature calibration ISO 9001"	

[1]Calibration services may not be available in all regions. Contact your local sales or service representative for more information.

Learn more at **thermofisher.com/cryomedgp**

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