

Sample Preparation, Protection & Preservation Solutions Catalogue



biocision®

From Brooks LIFE SCIENCES

Biocision - Standardization Through The Last Mile



Ice-free sample cooling and freezing

- Consistent and reproducible
- Ideal for working in a hood

Prepare.



CoolRack[®] and CoolBox[™] cooling systems



Controlled-rate cell freezing

- No alcohol
- High post-thaw recovery and viability
- Proven for stem cells, primary cells, PBMC, cell lines and more

Protect.



CoolCell[®] controlled-rate alcohol-free cell freezing containers



Archival storage integrity

- Hinged lid helps box and lid stay together
- LN2 drain holes and water proof fiberboard

Preserve.



TruCool[®] hinged cryoboxes and FluidX sample storage tubes



CoolCell[®] Container **Controlled-Rate, Alcohol-Free Cell Freezing**

CoolCell[®] Easy & Reproducible Cell Freezing Systems

CoolCell[®] Containers

CoolCell[®] alcohol-free cell freezing containers ensure standardized controlled-rate $-1^{\circ}\text{C}/\text{minute}$ cell freezing in a -80°C freezer - without alcohol or any fluids. Proven for use with a variety of cell types including stem cells, primary cells, PBMC cell lines, insect cells, yeast and others. The patent-pending CoolCell technology utilizes a thermo-conductive alloy core and highly-insulative outer material to control the rate of heat removal and provide reproducible cell cryopreservation. CoolCell units are easy to use and deliver comparable results to expensive programmable freezers.

CoolCell[®] is proven to work with many cell types including:

Stem Cells

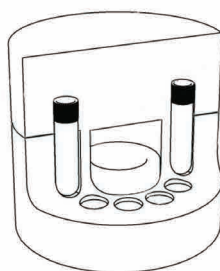
Human Embryonic Stem
Preadipocytes
Breast Cancer Stem
Colon Cancer Stem
Glioblastoma Stem
Mouse Embryonic Stem
Human Endothelial
Progenitor

Primary Cells

Neonatal Keratinocytes
Human WBCs
Mouse
WBCs
Human CD34+
Muscle
Human Tendon
Fibroblasts
Melanoma Tumor
Human Cardiac
Ventricular
Human Cardiac Atrial

Cell Lines

CHO
LnCap
HTB77
A549
HeLa

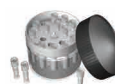


CoolCell[®] FX and LX, in combination with a -80°C freezer, will provide the freezing rate of $-1^{\circ}\text{C}/\text{minute}$ that is ideal for cryopreservation of most cells and cell lines. Using a combination of uniform-density cross-linked polyethylene foam, a solid state core, and radial vial symmetry, freezing profiles are consistent and reproducible. It is important to fully load CoolCell containers prior to freezing. Foam is non-absorbent and will impose negligible change in the freezer environment; thereby protecting nearby frozen samples. The low heat content also ensures that CoolCell containers will rapidly return to room temperature when removed from the freezer.

CoolCell[®] Container



Isopropanol (IPA) Container



No alcohol

- No fluids
- No pre-cooling
- Saves 12L/unit of IPA per year

No variability

- All vials have uniform freeze rate
- Radially symmetric design ensures vial consistency

No on-going cost

- No alcohol purchase or disposal

No stuck lids

- Ergonomic lid comes off easily when frozen
- Not cold to the touch when removing from the -80°C freezer

Quick re-use time

- Ready to use again after five minutes

Requires isopropanol

- Replace alcohol every 5 uses
- Track number of uses
- Pre-cool alcohol in refrigerator

Inconsistent freeze rate

- Alcohol degradation induces variability
- Two circles of wells; two freeze rates

Approximately \$350/year

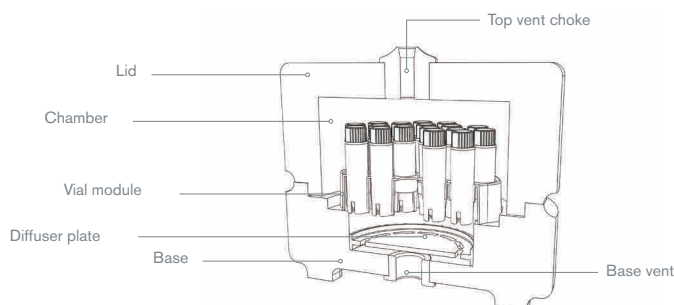
- Change alcohol weekly
- Dispose of hazardous waste

Difficult to handle and open

- Screw cap difficult to remove when frozen
- Frozen unit is slippery and cold to touch

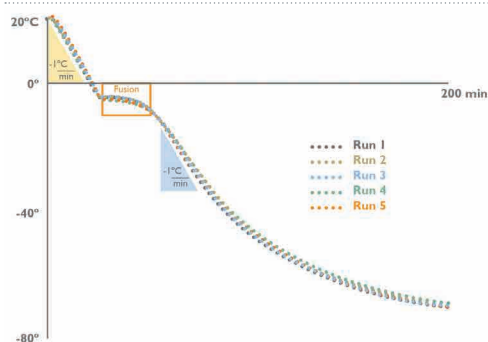
Wait between runs

- Takes >1 hr for alcohol to warm-up



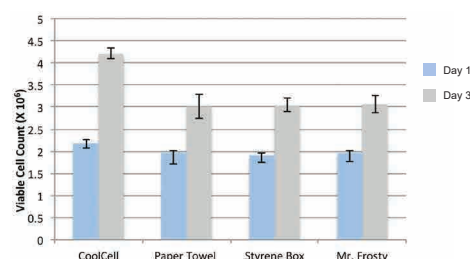
CoolCell[®] FTS30 utilizes a solid state core and controlled micro-convection technology to evenly draw in -80°C freezer air through a bottom base vent, uniformly disperse the cold air around each vial in the central chamber and then release the thermal load from the vials through a top vent choke. The inner vial module holds 30 cryogenic vials and can be removed in one step. Each vial achieves a uniform and reproducible $-1^{\circ}\text{C}/\text{minute}$ freezing profile and thermal profiles are highly reproducible. Due to the low thermal mass of the uniform-density cross-linked polyethylene foam container, freezing can be conducted without a rise in local freezer temperature, thereby protecting nearby samples.

CoolCell® Reproducibility

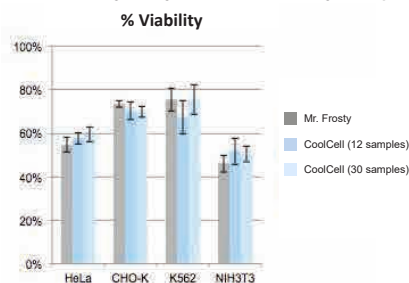


Performance test: A temperature probe was placed into a 2.0 mL cryogenic vial containing 1.0 mL of water and the tube was inserted into a room temperature CoolCell®. The CoolCell was placed into a -80°C freezer and the temperature rate and profile was recorded over a 3 hour period. The test was repeated 5 consecutive times. **Conclusion:** CoolCell generated identical fusion time and cooling profiles over five consecutive freeze cycles.

CoolCell® Performance vs. IPA Container

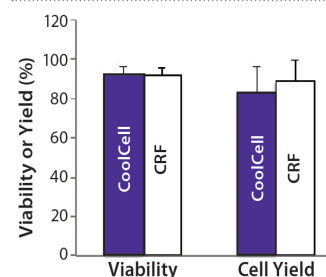


Human embryonic stem cells, RC-10 were frozen using the technique indicated, thawed after 2 weeks in LN₂, and counted immediately (Day 1) or after 3 days of growth (Day 3).



HeLa, CHO-K, K562, NIH3T3. CoolCell® 12-well, CoolCell FTS30 30-well or "Mr. Frosty" freezing containers were used to freeze all four cell lines. Identical transfection efficiencies and viabilities were observed after thawing.

CoolCell® Performance vs. Programmable Freezer



Ag-Tregs. Effects of freezing on antigen-specific Treg (Ag-Treg) cell therapy products; Ag-Tregs (n = 6) were frozen at concentration of 1 to 10 x 10⁶ cells/mL using the CoolCell freezing device or controlled-rate freezer (CRF) with a freezing rate of -1°C/min. Viability and absolute viable cell count of thawed Ag-Treg cell therapy products were evaluated by flow cytometry.

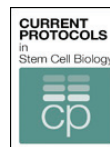
- Data generated by TxCell SA

CoolCell® Protocols



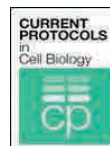
Cryopreservation and Thawing of Cells

Wayne M. Yokoyama, Maria L. Thompson, Rolf O. Ehrhardt
University of California School of Medicine, San Francisco, CA
BioCision LLC, Larkspur, California
Curr. Protoc. Immunology. 2012 Nov; 99 Appendix 3G



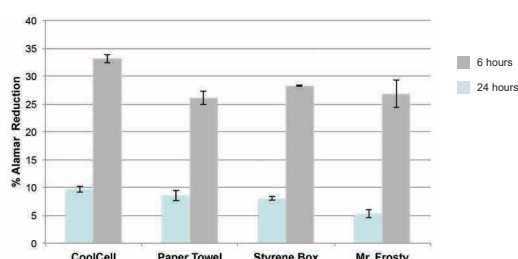
Standardized Cryopreservation of Pluripotent Stem Cells

Rick I. Cohen, Maria L. Thompson, Brian Schryver, Rolf O. Ehrhardt
Rutgers University, Piscataway, New Jersey
BioCision LLC, San Rafael, California
Curr. Protoc. Stem Cell Biol. 28:1C.14.1-1C.14.10

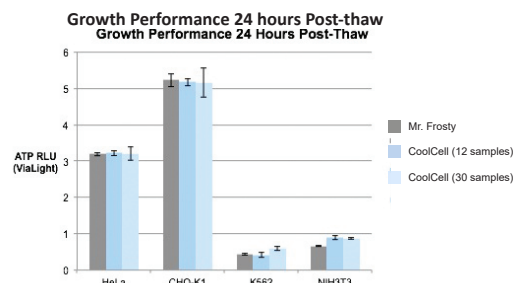


Standardized Cryopreservation of Human Primary Cells

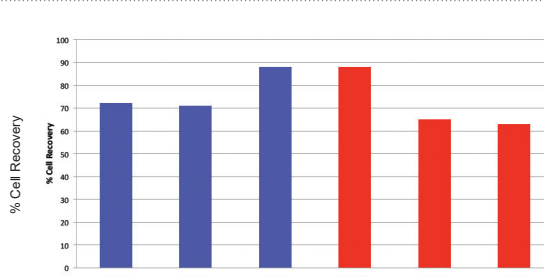
Thomas V. Ramos, Aby J. Mathew, Maria L. Thompson, Rolf O. Ehrhardt
HemaCare Corporation, Van Nuys, California, BioLife Solutions, Bothell, Washington, BioCision, Larkspur, California
Curr. Protoc. Cell Biology. 2014 Sept; 64 Appendix 3I.



Alamar blue reduction assay for proliferation assessment showed cells frozen in CoolCell® grew more quickly, leading to more total cells.



Identical growth of cells was observed 24 hours post-thaw.



Comparison of freezing methods. Graph comparing % of cell recovery after freezing with the CoolCell freezing device (blue) versus freezing using a programmable step-down freezer (red) in 3 different samples at high cell concentration. There was no significant difference between the two freezing methods.

- Data performed by UCSF Diabetes Center

For 1.0 mL or 2.0 mL Cryogenic Vials



CoolCell® 1mL FX

For 12 standard 1mL storage tubes. 0.5mL to 1mL fill per vial. Optimized for freezing 1mL 96-format sample tubes. Radially symmetric for uniform freezing. Numbered wells for easy identification. Beveled lid for secure gripping and easy opening.

Item No.	Description	External Dimensions	Well Diam.
BCS-407P	● CoolCell 1mL FX, purple	Diam 11.8 x H 11.0 cm	8.9 mm
BCS-407O	● CoolCell 1mL FX, orange		



CoolCell® LX

For 12 standard 1.0 mL to 2.0 mL cryogenic vials, 1.0 mL fill per vial. Radially symmetric for uniform vial freezing. Numbered wells for easy sample identification. Beveled lid for secure gripping and easy opening. Exposed vial tops when lid is open for quick, organized removal of frozen samples.

Item No.	Description	External Dimensions	Well Diam.
BCS-405	● CoolCell LX, purple	Diam 11.7 x H 9.9 cm	12.7 mm
BCS-405G	● CoolCell LX, green		
BCS-405O	● CoolCell LX, orange		
BCS-405PK	● CoolCell LX, pink		
BCS-405MC	● CoolCell LX, Multi-4 Pack		

For 3.5 mL to 5.0 mL Cryogenic Vials



CoolCell® 5mL LX

For 12 standard 3.5 mL to 5.0 mL fill cryogenic vials, 3.5 to 5.0 mL fill per vial. Radially symmetric for uniform vial freezing. Numbered wells for easy sample identification. Beveled lid for secure gripping and easy opening. Exposed vial tops when lid is open for quick, organized removal of frozen samples.

Item No.	Description	External Dimensions	Well Diam.
BCS-406	● CoolCell 5mL LX, purple	Diam 9.5 x H 14.5 cm	15.2 mm



CoolCell® FTS30

For 30 standard 1.0 mL to 2.0 mL cryogenic vials, 1.0 mL fill per vial. Controlled micro-convection for uniform freezing of 30 vials. Removable vial tray for one-step transfer of samples into and out of freezing chamber.

Item No.	Description	External Dimensions	Well Diam.
BCS-170	● CoolCell FTS30, purple	Diam 16.5 x H 11.5 cm	12.3 mm
BCS-170G	● CoolCell FTS30, green		
BCS-170O	● CoolCell FTS30, orange		
BCS-170PK	● CoolCell FTS30, pink		

For Injectable Cell Therapy Ampoules



CoolCell® SV2 and CoolCell® SV10

For 12 standard 2.0 mL injectable ampoules, 1.0 mL fill per ampule (SV2). For 6 standard 10.0 mL injectable ampoules, 5.0 mL fill per ampule (SV10). Radially symmetric for uniform freezing of injectable ampoules. Easy open lid. Exposed vial tops when lid is open for quick, organized removal of frozen samples.

Item No.	Description	External Dimensions	Well Diam.
BCS-172	● CoolCell SV2, purple	Diam 13.9 x H 10.5 cm	14.7 mm
BCS-262	● CoolCell SV10, purple	Diam 12.1 x H 9.8 cm	23.6 mm

Cell Cryopreservation Systems



CoolCell® SV2 Stem Cell Cryopreservation System

Item No.	Description	For Use With
BCS-172CS	• CoolCell SV2 Stem Cell Cryopreservation System	Kit designed for efficient and controlled preparation and cryopreservation of stem cells and cell therapy products. For 2.0 mL injectable cell therapy ampules.



CoolCell® SV10 Stem Cell Cryopreservation System

Item No.	Description	For Use With
BCS-262CS	• CoolCell SV10 Stem Cell Cryopreservation System	Kit designed for efficient and controlled preparation and cryopreservation of stem cells and cell therapy products. For 10.0 mL injectable cell therapy ampules.



Note: For optimal freezing it is important to fully load each CoolCell container prior to freezing. CoolCell Filler Vials are recommended for filling any empty wells.

CoolCell® Filler Vials

To ensure cell freezing rate consistency and uniform results when using CoolCell containers, insert a CoolCell Filler Vial into empty wells when freezing less than a full load. Suitable for repeated use and compatible with CoolCell LX, CoolCell FTS30 and CoolCell 5mL LX containers. 6 per pack.



CoolCell® FTS30 Vial Module

FTS30 Vial Module is a holder for 30 1.0 mL or 2.0 mL cryogenic vials that allows one-step insertion and removal of all 30 vials at once. Fits into a standard 5.0 x 5.0 x 2.0 inch cryostorage box. Compatible with dry ice and liquid nitrogen.

Item No.	Description	For Use With
BCS-3105	CoolCell Filler Vial, 2mL	CoolCell LX, CoolCell FTS30
BCS-3106	CoolCell Filler Vial, 5mL	CoolCell 5mL LX
BCS-3107	CoolCell Filler Vial, 1mL	CoolCell 1mL FX

Item No.	Description	For Use With
BCS-210	Removable cryogenic vial module for CoolCell FTS30	CoolCell FTS30



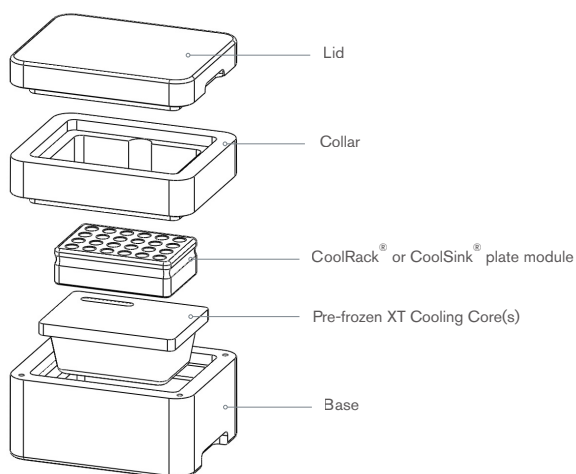
CoolBox™ Systems

Ice-Free Cooling and Freezing

CoolBox™ Optimized Sample Cooling and Freezing Systems

CoolBox™ Systems







CoolBox™ ice-free systems are bench top cooling workstations that provide sample cooling or freezing without ice, electricity or batteries. CoolBox systems are versatile and accommodate a variety of sample formats and temperatures. The modular design enables the use of CoolRack® and CoolSink® thermo-conductive sample modules to hold microfuge tubes, cryogenic vials, PCR tubes or plates, assay plates and more.



How It Works

- Freeze the XT Cooling Core in -20°C freezer
- Place frozen core in base
- Rest CoolRack or CoolSink module on core
- Module will equilibrate and maintain temperature via thermo-conductivity

How to Configure a CoolBox™ Ice-Free System

	1. Identify Tube or Plate	2. Choose CoolRack® or CoolSink® Module	3. Choose CoolBox™ capacity and color
Example 1	up to 24 microcentrifuge tubes	 CoolRack® XT M24	 CoolBox™ XT
Example 2	up to 48 microcentrifuge tubes	 2 x CoolRack® XT M24	 CoolBox™ 2XT
Example 3	24 microcentrifuge tubes and one PCR plate, 12 PCR strips, or 0.2 mL PCR tubes	 CoolRack® XT M24 + CoolRack® XT PCR96	 CoolBox™ 2XT

Choose Your CoolRack® Module



	XT Starter	CoolBox XT	CoolBox 2XT	CoolBox 30
Open	4 hr	10 hr	10 hr	4 hr
Closed	--	16 hr	16 hr	10 hr

Microtube modules: CoolRack® M

For Use With	Wells	Well Shape	Dimensions (L x W x H)	Well Dia.	Well Depth	Description	Item No.	Capacity			
1.5 mL or 2.0 mL tubes	6	Cylindrical	6.0 x 4.3 x 3.8 cm	11.1 mm	32.7 mm	CoolRack M6	BCS-163	1	up to 3	up to 8	up to 2
1.5 mL or 2.0 mL tubes	15	Cylindrical	10.2 x 6.4 x 3.8 cm	11.1 mm	32.7 mm	CoolRack M15	BCS-125	1	1	up to 4	1
1.5 mL conical tubes	15	Conical	10.2 x 6.4 x 3.8 cm	11.1 mm	35.3 mm	CoolRack M15-PF	BCS-127	1	1	up to 4	1
1.5 mL Or 2.0 mL tubes	24	Cylindrical	12.8 x 8.5 x 3.8 cm	11.1 mm	32.7 mm	CoolRack XT M24*	BCS-535	1	1	up to 2	--
5.0 mL centrifuge tubes	12	Conical	12.7 x 8.6 x 5.0 cm	16.5 mm	48.7 mm	CoolRack XT 5mL*	BCS-539	1	1	up to 2	--
1.5 mL or 2.0 mL tubes	30	Cylindrical	12.0 x 10.2 x 3.8 cm	11.1 mm	32.7 mm	CoolRack M30	BCS-108	1	--	up to 2	1
1.5 mL conical tubes	30	Conical	12.0 x 10.2 x 3.8 cm	11.1 mm	35.3 mm	CoolRack M30-PF	BCS-128	1	--	up to 2	1
500 uL conical tubes	30	Conical	12.0 x 10.2 x 3.8 cm	11.1 mm	35.3 mm	CoolRack M30-PF 500ul	BCS-137	1	--	up to 2	1

Cryogenic vial and FACS tube modules: CoolRack® CF

For Use With	Wells	Well Shape	Dimensions (L x W x H)	Well Dia.	Well Depth	Description	Item No.	Capacity			
cryogenic vials or FACS tubes	15	Cylindrical	10.2 x 6.4 x 3.8 cm	12.7 mm	32.7 mm	CoolRack CF15	BCS-126	1	1	up to 4	1
cryogenic vials or FACS tubes	24	Cylindrical	12.8 x 8.5 x 3.8 cm	12.7 mm	32.7 mm	CoolRack XT CFT24*	BCS-534	1	1	up to 2	--
cryogenic vials or FACS tubes	30	Cylindrical	12.0 x 10.2 x 3.8 cm	12.7 mm	32.7 mm	CoolRack CFT30 Ø	BCS-138	1	--	up to 2	1
cryogenic vials or FACS tubes	45	Cylindrical	17.3 x 9.7 x 3.8 cm	12.7 mm	32.7 mm	CoolRack CF45	BCS-105	--	--	1	--

PCR plate, strip well or tube modules: CoolRack® PCR

For Use With	Wells	Well Shape	Dimensions (L x W x H)	Well Dia.	Well Depth	Description	Item No.	Capacity			
One 96-well PCR plate, strip wells, 0.2mL tubes	96	Tapered	12.7 x 8.6 x 2.5 cm	-	13.2 mm	CoolRack XT PCR96*	BCS-529	1	1	up to 2	--
6 strip wells and 12 x 1.5 or 2.0 mL microtube tubes	48(PCR) 12(M)	Tapered(PCR) Cylindrical(M)	12.7 x 8.6 x 3.8 cm	- 11.1 mm	13.2 mm 32.7 mm	CoolRack XT M-PCR*	BCS-523	1	1	up to 2	--
One 384-well PCR plate	384	Tapered	12.7 x 8.6 x 1.9 cm	-	7.6 mm	CoolRack XT PCR384*	BCS-538	1	1	up to 2	--

2D barcode storage tube modules: CoolRack® 96

For Use With	Wells	Well Shape	Dimensions (L x W x H)	Well Dia.	Well Depth	Description	Item No.	Capacity			
0.5 mL 2D storage tubes	96	Cylindrical	13.1 x 8.9 x 3.6 cm	8.4 mm	24.6 mm	CoolRack 96x0.5mL	BCS-231	1	1	up to 2	--
1.4 mL 2D storage tubes	96	Cylindrical	13.2 x 8.9 x 3.6 cm	8.3 mm	32.7 mm	CoolRack 96x1 mL	BCS-149	1	1	up to 2	--

Cell therapy injectable ampule modules: CoolRack® SV

For Use With	Wells	Well Shape	Dimensions (L x W x H)	Well Dia.	Well Depth	Description	Item No.	Capacity			
2.0 mL injectable cell therapy ampules	12	Cylindrical	12.7 x 8.6 x 3.8 cm	16.0 mm	24.0 mm	CoolRack SV2	BCS-266	1	1	up to 2	--
10.0 mL injectable cell therapy ampules	12	Cylindrical	12.7 x 8.6 x 3.8 cm	23.6 mm	27.9 mm	CoolRack SV10	BCS-265	1	1	up to 2	--

Tall tube modules: CoolRack® 15mL, CoolRack® 50mL, CoolRack® 250mL

For Use With	Wells	Well Shape	Dimensions (L x W x H)	Well Dia.	Well Depth	Description	Item No.	Capacity			
15 mL centrifuge tubes	12	Cylindrical	13.7 x 9.5 x 11.8 cm	17.5 mm	105.4 mm	CoolRack Lt	BCS-232	1	1 ⁿ	up to 2 ⁿ	--
15 mL centrifuge tubes	9	Cylindrical	8.9 x 8.9 x 10.7 cm	17.1 mm	106.7 mm	CoolRack 15mL	BCS-153	1	1 ⁿ	up to 2 ⁿ	--
50 mL centrifuge tubes	4	Cylindrical	8.9 x 8.9 x 10.7 cm	29.5 mm	101.6 mm	CoolRack 50mL	BCS-154	1	1 ⁿ	up to 2 ⁿ	--
250 mL centrifuge tube	1	Conical	8.9 x 8.9 x 14.0 cm	60.4 mm	133.3 mm	CoolRack 250mL-PF	BCS-532	1	1 ^{**}	up to 2 ^{**}	--
250 mL centrifuge tube	1	Cylindrical	8.9 x 8.9 x 7.2 cm	73.6 mm	66. mm	n/a	BCS-533	1	1	up to 2	--

Blood collection tube modules: CoolRack® V

For Use With	Wells	Well Shape	Dimensions (L x W x H)	Well Dia.	Well Depth	Description	Item No.	Capacity			
13 mm or 16 mm blood tubes	12	Cylindrical	13.7 x 9.5 x 9.6 cm	16.6 mm	83.3 mm	CoolRack LVt	BCS-235	1	1	up to 2 ⁿ	--
13x75 mm blood tubes	9	Cylindrical	8.9 x 8.9 x 6.1 cm	13.0 mm	61.0 mm	CoolRack VS13	BCS-157	1	1 ⁿ	up to 2 ⁿ	--
13x100 mm blood tubes or 5 mL cryogenic vials	9	Cylindrical	8.9 x 8.9 x 8.4 cm	13.0 mm	83.8 mm	CoolRack V13	BCS-155	1	1 ⁿ	up to 2 ⁿ	--
16x100 mm blood tubes	9	Cylindrical	8.9 x 8.9 x 8.4 cm	16.0 mm	83.8 mm	CoolRack V16	BCS-156	1	1 ⁿ	up to 2 ⁿ	--

*SBS-compatible Ø "gripping" wells for one-hand vial opening/closing tThermo-conductive base and insulative exterior

ⁿ Requires extension collar accessory for closed lid cooling

^{**} Lid closure not possible even with the addition of extension collar

Choose Your CoolBox™ System



	XT Starter	CoolBox XT & 2XT	CoolBox 30
Holds Tubes	Yes	Yes	Yes
Holds Plates	Yes	Yes	n/a
0.5° - 4°C cooling with lid open	4 hours	10 hours	4 hours
0.5° - 4°C cooling with lid closed	n/a	16 hours	10 hours
<0°C freezing with lid open	n/a	5 hours	3 hours
<0°C freezing with lid closed	n/a	8 hours	6 hours

XT Starter

An open-platform ice-free cooler that accommodates most CoolRack® and CoolSink® modules. Low profile and small footprint make it ideal for use in the hood, keeping samples cold (0.5° to 4.0°C) up to four hours. 1°C to 8°C temperature indicator provides visual assurance of temperature performance. To extend the cooling duration, keep an additional XT Cooling Core in the freezer and rotate the Cores as needed.



Item No.	Description	Dimensions (L x W x H)
BCS-504	● XT Starter, complete, purple	External: 16.2 x 12.1 x 6.1 cm
BCS-513	● XT Starter Holder only, purple	
BCS-511	● XT Cooling Core only	

CoolBox™ XT or CoolBox 2XT System

Keep sample tubes or plates cold for over 16 hours with the lid on, and over 10 hours with the lid off. Use optional XT Freezing Core to maintain frozen samples for over 8 hours. Dry ice may be used in place of the cores to create a compact snap freezing workstation.



CoolBox™ XT System

Includes: CoolBox XT base, collar, lid and (1) XT Cooling Core for 0.5° to 4°C cooling.

Item No.	Description	Dimensions (L x W x H)
BCS-502	● CoolBox XT, purple	Internal: 14.0 x 9.4 x 9.9 cm* External: 20.0 x 16.0 x 15.0 cm
BCS-502G	● CoolBox XT, green	
BCS-502O	● CoolBox XT, orange	
BCS-502PK	● CoolBox XT, pink	
BCS-502-F	● CoolBox XT with freezing core	

*Internal height of open space when core is in the base.



CoolBox™ 2XT System

Includes: CoolBox 2XT base, collar, lid and (2) XT Cooling Cores for 0.5° to 4°C cooling.

Item No.	Description	Dimensions (L x W x H)
BCS-503	● CoolBox 2XT, purple	Internal: 21.0 x 14.3 x 13.4 cm* External: 26.5 x 20.0 x 15.0 cm
BCS-503G	● CoolBox 2XT, green	
BCS-503O	● CoolBox 2XT, orange	
BCS-503PK	● CoolBox 2XT, pink	
BCS-503-F	● CoolBox 2XT with freezing core	

*Internal height of open space when core is in the base.

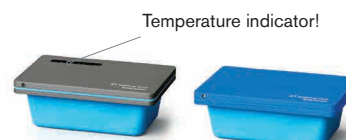
Optional Accessories



XT and 2XT Extension Collar

For use with CoolBox XT and CoolBox 2XT systems to accommodate tall tube modules. The collar is magnetized and easily adheres to the unit base.

Item No.	Description	Dimensions (L x W x H):
BCS-502-C	● XT Extension Collar, purple	Internal: 14.0 x 9.4 x 7.0 cm External: 20.0 x 16.0 x 7.0 cm
BCS-502-CG	● XT Extension Collar, green	
BCS-502-CO	● XT Extension Collar, orange	
BCS-502-CPK	● XT Extension Collar, pink	
BCS-503-C	● 2XT Extension Collar, purple	Internal: 21.0 x 14.3 x 7.0 cm External: 26.5 x 20.0 x 7.0 cm
BCS-503-CG	● 2XT Extension Collar, green	
BCS-503-CO	● 2XT Extension Collar, orange	
BCS-503-CPK	● 2XT Extension Collar, pink	



XT Cores

Keep additional cooling or freezing cores in the freezer for flexibility and extended duration. XT Cooling Core features a 1 to 8°C temperature indicator. Both cooling and freezing cores feature a thermo-conductive surface for uniform temperature distribution.

Item No.	Description
BCS-511	● XT Cooling Core, 0.5° to 4°C
BCS-512	● XT Freezing Core, below 0°C

CoolBox™ 30 System

Keeps tubes cold (0.5° to 4.0°C) for up to 10 hours. Use the optional freezing cartridge to maintain frozen samples below 0°C for up to 6 hours.



CoolBox™ 30 System

Includes: CoolBox 30 base and lid, blue cooling cartridge.

Item No.	Description	Dimensions (L x W x H)
BCS-130	● CoolBox 30, purple	Internal: 12 x 10.4 x 7.9 cm* External: 16.5 x 15.25 x 12.7 cm

*Internal height of open space when cartridge is in the base.



CoolBox 30 Cartridges

Item No.	Description
BCS-132	Cooling Cartridge, blue, 3 per pack
BCS-131	Freezing Cartridge, green, 3 per pack

Popular Pre-assembled Configurations



XT Starter PCR Cooling Systems, pre-assembled

Application	For Use With	Includes	Description	Item No.	Color
PCR/qPCR plate and reagent tube preparation	One 96-well PCR plate, 12 strip-wells or 96 0.2 mL tubes	1 x XT Starter 1 x CoolRack XT PCR96	XT Starter PCR96 System	BCS-556	●
PCR/qPCR strip well and reagent tube preparation	12 x 1.5 mL or 2.0 mL microfuge tubes and 6 rows of PCR stripwells	1 x XT Starter 1 x CoolRack XT M-PCR	XT Starter M-PCR System	BCS-557	●



CoolBox™ XT and CoolBox™ 2XT Systems, pre-assembled

Application	For Use With	Includes	Description	Item No.	Color
Enzyme, PCR reagent or other biological specimen cooling	24 x 1.5 mL or 2.0 mL microfuge tubes	1 x CoolBox XT System 1 x SBS-compatible CoolRack XT M24	CoolBox XT MicroTube 24 System	BCS-576	●
Cell thawing, tissue culture	24 x 1.0 mL or 2.0 mL cryogenic vials with "gripping" wells for one-hand tube opening/closing	1 x CoolBox XT System 1 x SBS-compatible CoolRack XT CFT24	CoolBox XT CryoTube 24 System	BCS-575	●
PCR/qPCR plate preparation	One 96-well PCR plate, 12 strip wells or 96 0.2 mL tubes	1 x CoolBox XT System 1 x SBS-compatible CoolRack XT PCR96	CoolBox XT PCR96 System	BCS-570	●
PCR/qPCR strip well and reagent tube preparation	6 strip wells and 12 microfuge tubes (1.5 to 2.0 mL)	1 x CoolBox XT System 1 x SBS-compatible CoolRack XT M-PCR	CoolBox XT PCR Strip System	BCS-572	●
PCR/qPCR plate and reagent tube preparation	One 96-well PCR plate 12, strip wells 96 0.2 mL tubes and 24 x 1.5 mL or 2.0 mL microfuge tubes	1 x CoolBox 2XT System 1 x SBS-compatible CoolRack XT M24 1 x CoolRack PCR96	CoolBox 2XT PCR Sample Preparation System	BCS-573	●



CoolBox™ 30 Systems, pre-assembled

Application	For Use With	Includes	Description	Item No.	Color
Enzyme, PCR reagent or other biological specimen cooling	30 x 1.5 mL or 2.0 mL microfuge tubes	1 x CoolBox 30 System 1 x CoolRack M30	CoolBox M30 System	BCS-133	●
Cell preparation or thawing, tissue culture	30 x 1.0 mL or 2.0 mL cryogenic vials, with "gripping" wells for one-hand vial opening and closing	1 x CoolBox 30 System 1 x CoolRack CFT30	CoolBox CFT30 System	BCS-166	●

CoolRack[®]

Thermo-Conductive Tube Modules

CoolRack[®] Adaptive Thermal Reaction Racks

CoolRack™

CoolRack® thermo-conductive tube modules eliminate variability which originates from tubes placed directly into ice, dry ice, alcohol baths, water baths and other temperature sources. Place the CoolRack module directly onto a temperature source between -196°C to $>100^{\circ}\text{C}$ and it will rapidly adapt to that temperature. CoolRack modules ensure $\pm 0.1^{\circ}\text{C}$ temperature uniformity across all tubes when cooling, snap freezing, heating or thawing. Suggested applications include cooling reagents such as restriction enzymes, dNTPs and antibodies, alcohol-free dry ice snap freezing of tissue, virus and bacteria samples and bench top cryogenic tube sorting in liquid nitrogen. All CoolRack modules may be autoclaved, high heat sterilized or decontaminated with bleach, alcohol or other disinfectants or lab detergents. Certain CoolRack modules are SBS-compatible.



Problem: Samples in Ice

- Non-uniform ice contact results in variable sample temperature
- Disorganized samples, wet labels
- Shifting, sinking tubes; contamination risk
- Non-reproducible method



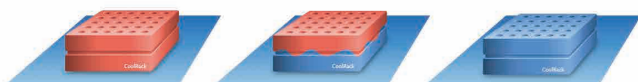
Solution: Samples in CoolRack® Module

- All samples $<4^{\circ}\text{C}$ and uniform in temperature ($\pm 0.1^{\circ}\text{C}$)
- Samples organized, secure and dry
- All tubes upright and indexed
- Reproducible method



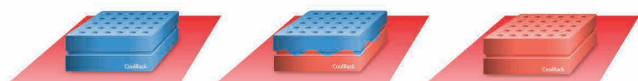
How It Works

Cooling



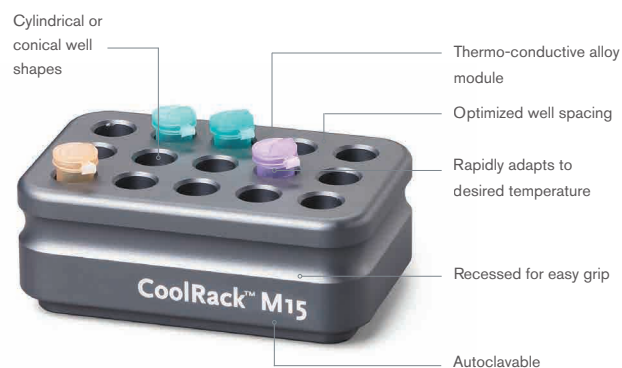
CoolRack on Ice: Heat from the relatively warmer CoolRack module is transferred to cooling source (wet or dry ice, cartridge, LN2) until equilibrium is reached.

Warming

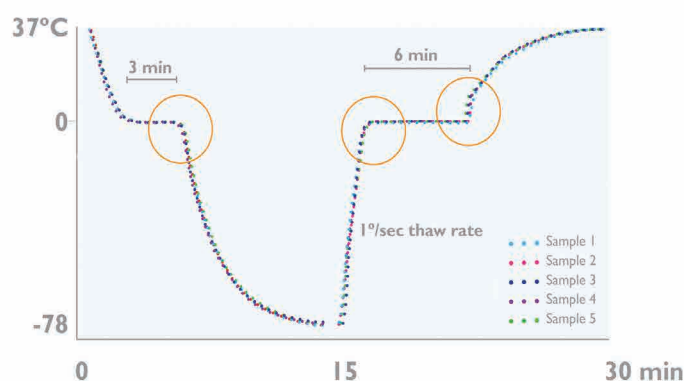


CoolRack in Water Bath: Heat is transferred from water bath toward relatively cooler CoolRack until equilibrium is reached.

CoolRack® and CoolSink® are precision-engineered sample modules manufactured from a novel thermo-conductive alloy material. Thermo-conductivity is the transfer of heat energy from a higher temperature region to a lower temperature region. CoolRack modules evenly distribute the temperature across all wells providing very uniform and consistent temperature to all samples ($\pm 0.1^{\circ}\text{C}$).



CoolRack® Reproducibility



Performance test: A temperature probe was placed into a 2.0 mL cryogenic vial containing 1.0 mL of water. The tube was inserted into a CoolRack® CF45 thermo-conductive module. The module was placed onto a ThermalTray platform in a 37°C water bath and allowed to equilibrate. The CoolRack CF45 module was then removed and placed onto dry ice and equilibrated to -78°C (0 - 15 minutes) and then returned to the water bath to re-equilibrate to 37°C (15 - 30 minutes). This experiment was repeated five consecutive times and temperature profiles were recorded.

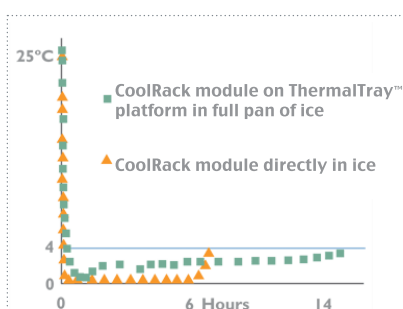
Conclusion: The CoolRack CF45 module showed identical cooling profiles and phase transition (orange circles) over five consecutive freeze-thaw cycles.

CoolRack® Versatility and Performance



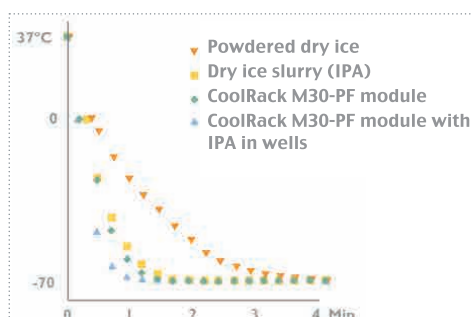
On Ice

- Adapts from ambient (25°C) to <4°C in 60-90 seconds*
- Samples and labels stay dry, organized
- Hours of ice cooling without direct ice contact
- Reproducible method



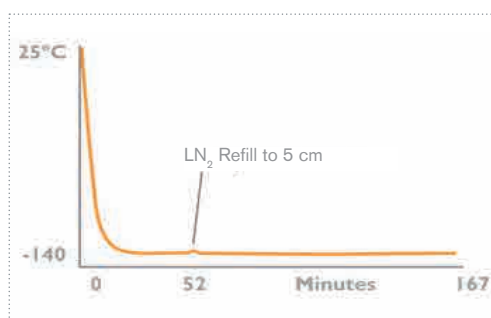
On Dry Ice

- Adapts from ambient (25°C) to -78°C in approximately 5-7 minutes*
- Eliminates ethanol from snap freezing
- Samples are upright and organized as they freeze
- Equal or better freezing rate as compared to direct immersion into dry ice or alcohol slurry
- Reproducible method



In Liquid Nitrogen (LN2)

- Adapts from ambient (25°C) to approximately -150°C in approximately 12-14 minutes*
- Vapor barrier protects from ambient air
- Samples are upright and organized as they freeze
- No direct contact between samples and LN2
- Reproducible method



With Heat Sources

- Use with water baths, hot plates, incubators and other heat sources to keep samples warm

*Average cooling rate from room temperature

CoolRack® Sample Tube Modules



CoolRack® M microfuge tube modules

Item No.	Description	For Use With	Wells	Well Shape	Dimensions (L x W x H)	Well Dia.	Well Depth	Row Spacing	Column Spacing
BCS-163	CoolRack M6	1.5 mL or 2.0 mL tubes	6	Cylindrical	6.0 x 4.3 x 3.8 cm	11.1 mm	32.7 mm	17.8 mm	17.8 mm
BCS-165	CoolRack M6, green								
BCS-164	CoolRack M6, orange								
BCS-125	CoolRack M15	1.5 mL or 2.0 mL tubes	15	Cylindrical	10.2 x 6.4 x 3.8 cm	11.1 mm	32.7 mm	17.8 mm	17.8 mm
BCS-125G	CoolRack M15, green								
BCS-125O	CoolRack M15, orange								
BCS-127	CoolRack M15-PF	1.5 mL conical tubes	15	Conical	10.2 x 6.4 x 3.8 cm	11.1 mm	35.3 mm	17.8 mm	17.8 mm
BCS-535	CoolRack XT M24*	1.5 mL or 2.0 mL tubes	24	Cylindrical	12.8 x 8.5 x 3.8 cm	11.1 mm	32.7 mm	19.4 mm	19.4 mm
BCS-539	CoolRack XT 5mL*	5.0 mL centrifuge tubes	12	Conical	12.7 x 8.6 x 5.0 cm	16.5 mm	48.7 mm	28.0 mm	28.0 mm
BCS-108	CoolRack M30	1.5 mL or 2.0 mL tubes	30	Cylindrical	12.0 x 10.2 x 3.8 cm	11.1 mm	32.7 mm	17.8 mm	17.8 mm
BCS-108G	CoolRack M30, green								
BCS-108O	CoolRack M30, orange								
BCS-128	CoolRack M30-PF	1.5 mL conical tubes	30	Conical	12.0 x 10.2 x 3.8 cm	11.1 mm	35.3 mm	17.8 mm	17.8 mm
BCS-137	CoolRack M30-PF 500ul	500 uL conical tubes	30	Conical	12.0 x 10.2 x 3.8 cm	4.1 mm	26.9 mm	17.8 mm	17.8 mm
BCS-102	CoolRack M90	1.5 mL or 2.0 mL tubes	90	Cylindrical	26.8 x 11.2 x 3.8 cm	11.1 mm	32.7 mm	17.8 mm	17.8 mm
BCS-116	CoolRack M96ID*	1.5 mL or 2.0 mL tubes	96	Cylindrical	25.4 x 15.2 x 3.8 cm	11.1 mm	32.7 mm	17.8 mm	17.8 mm

*SBS-compatible *CoolRack M96ID has A-H and 1-12 row and column indexing



CoolRack® CF cryogenic vial and FACS tube modules

Item No.	Description	For Use With	Wells	Well Shape	Dimensions (L x W x H)	Well Dia.	Well Depth	Row Spacing	Column Spacing
BCS-126	CoolRack CF15	cryogenic vials or FACS tubes	15	Cylindrical	10.2 x 6.4 x 3.8 cm	12.7 mm	32.7 mm	17.8 mm	17.8 mm
BCS-534	CoolRack XT CFT24*	cryogenic vials or FACS tubes	24	Cylindrical	12.8 x 8.5 x 3.8 cm	12.7 mm	32.7 mm	17.8 mm	17.8 mm
BCS-138	CoolRack CFT30*	cryogenic vials or FACS tubes	30	Cylindrical	12.0 x 10.2 x 3.8 cm	12.7 mm	32.7 mm	17.8 mm	17.8 mm
BCS-105	CoolRack CF45	cryogenic vials or FACS tubes	45	Cylindrical	17.3 x 9.7 x 3.8 cm	12.7 mm	32.7 mm	17.8 mm	17.8 mm

*SBS-compatible *"gripping" wells for one-hand vial opening/closing



CoolRack® PCR plate, strip well or tube modules

Item No.	Description	For Use With	Wells	Well Shape	Dimensions (L x W x H)	Well Dia.	Well Depth	Row Spacing	Column Spacing
BCS-529	CoolRack XT PCR96*	One 96-well PCR plate, strip wells, tubes	96	Tapered	12.7 x 8.6 x 2.5 cm	-	13.2 mm	9.0 mm	9.0 mm
BCS-523	CoolRack XT M-PCR*	6 strip wells and 12 x 1.5 or 2.0 mL microfuge tubes	48(PCR) 12(M)	Tapered(PCR) Cylindrical(M)	12.7 x 8.6 x 3.8 cm	- 11.1 mm	13.2 mm 32.7 mm	9.0 mm 14.0 mm	9.0 mm 20.3 mm
BCS-538	CoolRack XT PCR384*	One 384-well PCR plate	384	Tapered	12.7 x 8.6 x 1.9 cm	-	7.6 mm	4.5 mm	4.5 mm

*SBS-compatible



CoolRack® 96 2D barcode storage tube modules

Item No.	Description	For Use With	Wells	Well Shape	Dimensions (L x W x H)	Well Dia.	Well Depth	Row Spacing	Column Spacing
BCS-231	CoolRack 96x0.5mL	0.5 mL 2D storage tubes	96	Cylindrical	13.1 x 8.9 x 3.6 cm	8.4 mm	24.6 mm	9.0 mm	9.0 mm
BCS-149	CoolRack 96x1mL	1.4 mL 2D storage tubes	96	Cylindrical	13.2 x 8.9 x 3.6 cm	8.3 mm	32.7 mm	14.0 mm	17.8 mm



CoolRack® SV cell therapy injectable ampule modules

Item No.	Description	For Use With	Wells	Well Shape	Dimensions (L x W x H)	Well Dia.	Well Depth	Row Spacing	Column Spacing
BCS-266	CoolRack SV2	2.0 mL injectable cell therapy ampules	12	Cylindrical	12.7 x 8.6 x 3.8 cm	16.0 mm	24.0 mm	27.0 mm	30.0 mm
BCS-265	CoolRack SV10	10.0 mL injectable cell therapy ampules	12	Cylindrical	12.7 x 8.6 x 3.8 cm	23.6 mm	27.9 mm	25.9 mm	32.1 mm

Tall Tube Modules



CoolRack® 15mL and CoolRack® 50mL tube modules

Item No.	Description	For Use With	Wells	Well Shape	Dimensions (L x W x H)	Well Dia.	Well Depth	Row Spacing	Column Spacing
BCS-232	CoolRack L*	15 mL centrifuge tubes	12	Cylindrical	13.7 x 9.5 x 11.8 cm	17.5 mm	105.4 mm	25.4 mm	30.5 mm
BCS-153	CoolRack 15mL	15 mL centrifuge tubes	9	Cylindrical	8.9 x 8.9 x 10.7 cm	17.1 mm	106.7 mm	26.7 mm	26.7 mm
BCS-154	CoolRack 50mL	50 mL centrifuge tubes	4	Cylindrical	8.9 x 8.9 x 10.7 cm	29.5 mm	101.6 mm	40.6 mm	40.6 mm
BCS-532	CoolRack 250mL-PF	250 mL centrifuge tube	1	Conical	8.9 x 8.9 x 14.0 cm	60.4 mm	133.3 mm	n/a	n/a
BCS-533	CoolRack 250mL	250 mL centrifuge tube	1	Cylindrical	8.9 x 8.9 x 7.2 cm	73.6 mm	66.5 mm	n/a	n/a

* Thermo-conductive base and insulative exterior



CoolRack® V blood collection tube modules

Item No.	Description	For Use With	Wells	Well Shape	Dimensions (L x W x H)	Well Dia.	Well Depth	Row Spacing	Column Spacing
BCS-235	CoolRack LV*	13 mm or 16 mm blood tubes	12	Cylindrical	13.7 x 9.5 x 9.6 cm	16.6 mm	83.3 mm	25.4 mm	30.5 mm
BCS-157	CoolRack VS13	13x75 mm blood tubes	9	Cylindrical	8.9 x 8.9 x 6.1 cm	13.0 mm	61.0 mm	26.7 mm	26.7 mm
BCS-155	CoolRack V13	13x100 mm blood tubes or 5 mL cryogenic vials	9	Cylindrical	8.9 x 8.9 x 8.4 cm	13.0 mm	83.8 mm	26.7 mm	26.7 mm
BCS-156	CoolRack V16	16x100 mm blood tubes	9	Cylindrical	8.9 x 8.9 x 8.4 cm	16.0 mm	83.8 mm	26.7 mm	26.7 mm

* Thermo-conductive base and insulative exterior

CoolSink[®] & ThermalTray[™] Thermo-Conductive Plate Modules & Platforms

CoolSink[®] & ThermalTray[™] Adaptive Thermal Platforms

CoolSink® Thermo-Conductive Plate Modules

CoolSink® thermo-conductive plate and reservoir modules provide uniform temperature to all wells, regardless of position. When placed onto a temperature source such as ice, dry ice, liquid nitrogen or water baths, the CoolSink module will rapidly adapt to that temperature - from -196°C to >+100°C. CoolSink modules ensure temperature sample uniformity when cooling, snap freezing, heating or thawing samples. All CoolSink modules may be autoclaved, high heat sterilized or decontaminated with bleach, alcohol or other disinfectants or lab detergents. All modules are compatible with all temperature sources.

Problem: Non-Uniform Plate Cooling with Crushed Ice

Final equilibrium well temperature for a 96-well flat bottom plate in direct contact with crushed ice.

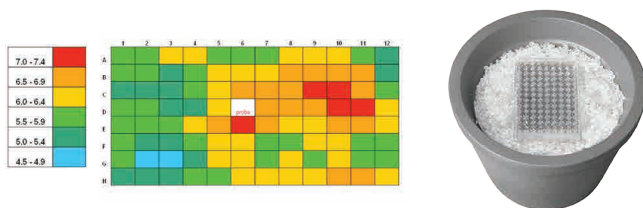


Plate directly on crushed ice does not reach 4°C in any of the wells and well-to-well temperature is uneven.

Solution: Uniform Plate Cooling with CoolSink® XT 96F Module

CoolSink 96F on ice. Colors represent 0.5°C temperature intervals of the corresponding plate wells. The white cell represents the well that was fitted with the thermocouple probe.

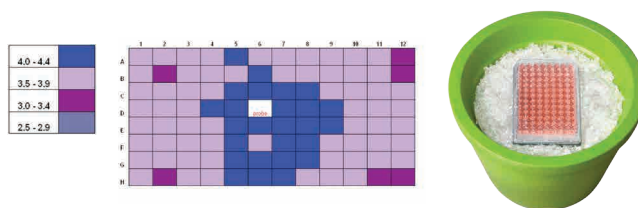


Plate placed on CoolSink module and then placed on ice shows more uniform well-to-well temperature and all wells at or below 4°C (Blue center plate wells are slightly warmer due to curvature of the underside of the plate.)

Published in Biotechniques, November 2010.

Plate and Reservoir Modules



CoolSink® XT

SBS-compatible plate modules

Item No.	Description	For Use With	Dimensions (L x W x H)
BCS-536	CoolSink XT 96F	For one 6-, 12-, 24-, 48-, 96- or 384-well flat bottom plate	12.8 x 8.5 x 1.7 cm
BCS-537	CoolSink XT 96U	For one 96-well u-bottom plate	12.8 x 8.5 x 1.7 cm



CoolSink® LX55

For 55 mL reagent reservoirs

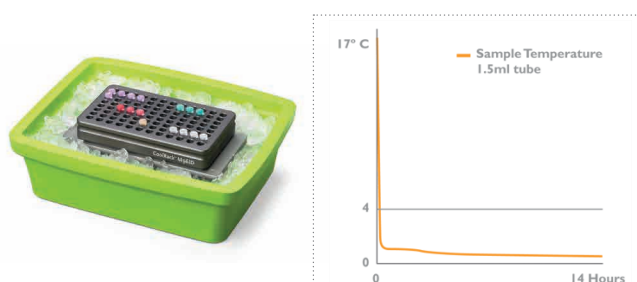
Item No.	Description	Dimensions (L x W x H)
BCS-184	CoolSink LX55	14.6 x 6.4 x 3.5 cm

ThermalTray™ Thermo-Conductive Platforms

ThermalTray™ thermo-conductive platforms support CoolRack® and CoolSink® sample modules in liquid temperature sources such as melting ice, water baths and liquid nitrogen. Made of the same highly conductive alloy as CoolRack and CoolSink modules, ThermalTray platforms conduct the source temperature to the CoolRack or CoolSink and, ultimately, to your samples. The stable, sturdy design makes them ideal for processing temperature-sensitive samples in melted ice baths or liquid nitrogen. All modules may be autoclaved, high heat sterilized or decontaminated with bleach, alcohol or other disinfectants or lab detergents.

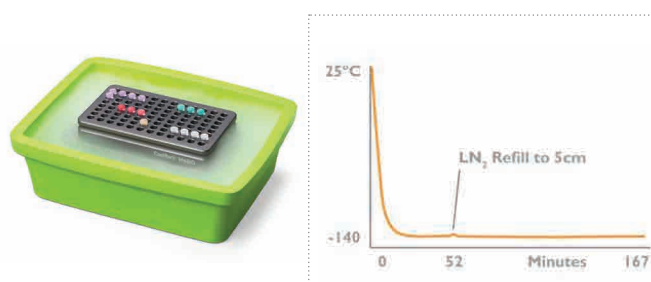
In Ice

Keep samples <4°C for over 10 hours while ice melts



In Liquid Nitrogen

Keep samples at -140°C with liquid nitrogen



ThermalTray™ Platforms



ThermalTray™ platforms are compatible with all temperature sources. If using in liquid nitrogen, the ThermalTray SLP or LP is highly recommended. These low profile ThermalTray platforms allow development of a vapor layer which will help insulate samples from ambient air

Item No.	Description	For Use With	Dimensions (L x W x H)
BCS-252	ThermalTray SLP, slim low-profile	9L ice pan with LN2	28.0 x 14.0 x 3.2 cm
BCS-123	ThermalTray LP, low-profile	9L ice pan with crushed ice	28.0 x 14.0 x 5.1 cm
BCS-104	ThermalTray HP, high-profile	water bath	28.0 x 14.0 x 8.6 cm



With Heat Sources

- Use with water baths, hot plates, incubators and other heat sources to keep samples warm

**Average cooling rate from room temperature*








TruCool[®] Accessories

TruCool[®] Accessories

TruCool[®] Ice Pans and Buckets

Non-toxic, recyclable ethyl-vinyl acetate (EVA) foam containers for use with ice, dry ice, liquid nitrogen, alcohol slurries. Will not sweat, leak or skid on bench.



Size	Dimensions (L x W x H)	purple	lime green	orange	pink	blue	green	red
 Mini 1L Ice Pan	15.9 x 15.9 x 9.5 cm	BCS-211PL	BCS-211GR	BCS-211OR	BCS-211PK	BCS-211B	BCS-211	BCS-212
 Midi 4L Ice Pan	31.1 x 22.2 x 11.4 cm	BCS-113PL	BCS-113GR	BCS-113OR	BCS-113PK	BCS-113B	BCS-113	BCS-114
 Midi 4L Ice Pan with Lid	35.0 x 22.5 x 11.4cm	BCS-117PL	BCS-117GR	BCS-117OR	BCS-117PK	BCS-117B		
 Maxi 9L Ice Pan	40.6 x 31.8 x 11.4 cm	BCS-111PL	BCS-111GR	BCS-111OR	BCS-111PK	BCS-111B	BCS-111	BCS-112
 Maxi 9L Ice Pan with Lid	44.5 x 32.5 x 11.4 cm	BCS-118PL	BCS-118GR			BCS-118B		
 Round 2.5L Ice Bucket with Lid	Top diameter: 24.1 cm, Height: 12.1 cm	BCS-115-25PL	BCS-115-25GR	BCS-115-25OR	BCS-115-25PK	BCS-115-25B	BCS-115-25G	BCS-115-25R
 Round 4L Ice Bucket with Lid	Top diameter: 26.0 cm, Height: 18.4 cm	BCS-115PL	BCS-115GR	BCS-115OR	BCS-115PK	BCS-115B	BCS-115	BCS-115R

CryoCeps[™] Cryogenic Vial Grippers

Cryogenic vial grippers feature a unique design to grasp internal- or external-thread cryogenic vials. Easily sort or move vials while maintaining sterility and protecting fingers from frozen vials, dry ice and liquid nitrogen. 5 per pack.




Item No.	Description
BCS-213MC	 CryoCeps Cryogenic Vial Grippers, multi-color

TruCool[®] Cryogenic Vial Locking Racks

Cryogenic vial locking racks feature a locking mechanism that allow one-hand opening for self-standing cryogenic vials. Accommodates both round bottom and self-standing vial formats. Racks have A - J and 1 - 5 row and column indexing for easy organization. Autoclavable. 5 per pack.



Item No.	Description
BCS-222	 TruCool Cryogenic Vial Locking Racks, multi-color

TruCool[®] Hinged CryoBoxes

Patented hinged lid offers convenience and archival integrity, ensuring markings and vials remain in sync. Lid stays attached to base minimizing risk of separation and lid contamination. Lid is easy to open when frozen. Available in 9x9, 10x10, and vapor phase LN₂ compatible formats. Plastic 81-place grid has adjustable slats to accommodate multiple vial types. 2-inch box holds 1.0 mL or 2.0 mL cryogenic vials and microfuge tubes. 3.5-inch box holds 3.0 mL to 5.0 mL cryogenic vials.

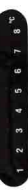
Hinged cryoboxes can be customized to suit various requirements. Options include new colors, logos, designs, grid sizes and additional components.



	Freezer Storage				CryoStorage			
	2-inch Hinged CryoBox with adjustable plastic grid, 81-place		2-inch Hinged CryoBox with fixed plastic insert, 100-place		3.5-inch Hinged CryoBox with adjustable plastic grid, 81-place		2-inch Hinged CryoBox with adjustable plastic grid, LN ₂ drain holes, 81-place	
Qty per pack	5	50	5	50	6	30	5	50
white	BCS-206	BCS-207						
blue	BCS-206B	BCS-207B						
green	BCS-206G	BCS-207G	BCS-209G	BCS-220G	BCS-215G	BCS-219G	BCS-217G	BCS-221G
orange	BCS-206O	BCS-207O						
purple	BCS-206P	BCS-207P	BCS-209P	BCS-220P	BCS-215P	BCS-219P	BCS-217P	BCS-221P
pink	BCS-206PK	BCS-207PK						
multi-color (no white)	BCS-206MC							
Dimensions (L x W x H)	13.3 x 13.3 x 5.1 cm 5.25 x 5.25 x 2.0 in		13.3 x 13.3 x 5.1 cm 5.25 x 5.25 x 2.0 in		13.3 x 13.3 x 9.2 cm 5.25 x 5.25 x 3.5 in		13.3 x 13.3 x 5.1 cm 5.25 x 5.25 x 2.0 in	

LCD Temperature Strips

Adhesive temperature display shows the temperature of a surface with 1°C resolution. Ideal for placement on CoolRack, CoolSink and Thermal Tray thermo-conductive modules.



Item No.	Description
BCS-143	1-8c, 3pk.

CoolRack Sleeves

Item No.	Description
BCS-205	CoolRack Sleeves, 4pk



TruCool® Barcoded Cryogenic Vials

TruCool leak-proof, auto-cap cryogenic vials are ideal for cell culture and biobanking. The screw cap features a co-molded thermally-fused gasket which prevents leaking, slipping and risk of contamination.

The gasket is 95kPa certified to provide a leak-proof seal. The star socket on cap top is compatible with auto-decapping equipment. Each vial is individually barcoded with a unique identifier that can be read with common barcode readers. Not recommended for storage directly in liquid nitrogen. Vapor phase ok. 500 per case.



Internal Threads

External Threads

Internal Threads

Item No.	BCS-2510	BCS-2511	BCS-2512	BCS-2513	BCS-2514	BCS-2515	BCS-2516
Volume	1.0 mL	2.0 mL	2.0 mL	4.0 mL	4.0 mL	5.0 mL	5.0 mL
Height*	42.7 mm	48.0 mm	47.0 mm	75.1 mm	76.1 mm	89.3 mm	90.4 mm
Tube/Cap O.D.	12.5 mm	12.5 mm	12.5 mm	12.5 mm	12.5 mm	12.5 mm	12.5 mm
Style	Self-Standing	Self-Standing	Round-Bottom	Round-Bottom	Self-Standing	Round-Bottom	Self-Standing

External Threads

Item No.	BCS-2517	BCS-2501	BCS-2502	BCS-2503	BCS-2504	BCS-2505
Volume	1.0 mL	2.0 mL	2.0 mL	3.0 mL	4.0 mL	5.0 mL
Height*	40.1 mm	44.5 mm	45.5 mm	69.3 mm	73.9 mm	88.1 mm
Tube/Cap O.D.	12.5 mm	12.5 mm	12.5 mm	12.5 mm	12.5 mm	12.5 mm
Style	Self-Standing	Round-Bottom	Self-Standing	Self-Standing	Self-Standing	Self-Standing

*Height with cap attached

TruCool® Cryogenic Vial Cap Inserts

Inserts for auto caps. 1,000 per pack.

Caps designed to color code tubes. Ideal for labeling different specimen tubes and cataloging sample inventory.

Color	purple	pink	green	yellow	white	red	grey	blue	orange
Item No.	BCS-2436	BCS-2432	BCS-2431	BCS-2434	BCS-2435	BCS-2433	BCS-2438	BCS-2430	BCS-2437



CoolSense™

Temperature & Humidity Monitoring

CoolSense™ Easy to Use Temperature Management Solutions

CoolSense™ Temperature & Humidity Monitoring

Easy to use sample monitoring for small, highly distributed biosample and compound storage. Ensure sample quality and integrity with a Brooks solution that is easy to own, simple to install, and effortless to use.

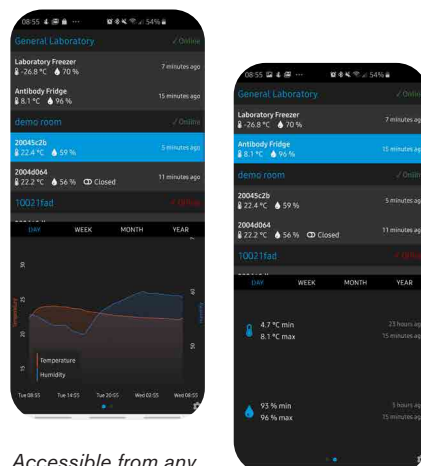
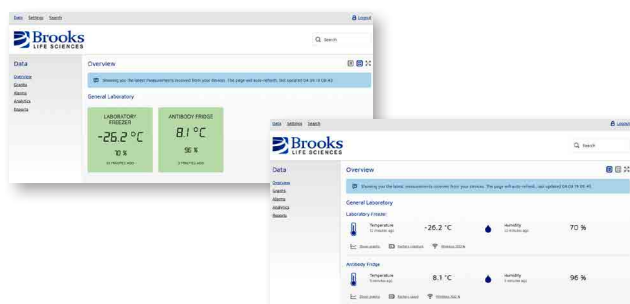
Maintain sample temperature, viability & integrity

CoolSense is designed for small research laboratories and life science facilities where real-time tracking and maintaining sample temperature, viability, and integrity have not been affordable or feasible. The solution features easy, do-it-yourself installation with no software to load or configure. Its plug-and-play networking and wireless connectivity simplify set up. Data and reports are preconfigured in a Web-based customer portal that is easily accessible from any desktop, laptop, or mobile device. The CoolSense system is easily scalable and expandable and can measure sample temperature from ambient to cryogenic conditions.

The solution allows quick access to sample temperature data, permitting fast response to out of specification conditions. Real-time regulatory checks can be conducted without having to access the freezer. In addition, the CoolSense system helps laboratories meet sample quality audits and assessments.

Perform in-transit monitoring

CoolSense sensors also can be attached to sample transport devices for in-transit monitoring in areas covered by the solution's Wi-Fi network. Door sensors alert researchers when freezers are left open or are being accessed.



Accessible from any desktop, laptop, or mobile device.

Features & Benefits

- ✓ Easy to use, affordable sample temperature monitoring
- ✓ Measures sample temperature from ambient to -190° C
- ✓ Ideal for small, highly distributed stores
- ✓ Do-it-yourself installation
- ✓ Simple operation and data access
- ✓ Cloud-based data portal
- ✓ Monitors sample temperature in real time

The CoolSense Explorer Pack comes with 5 wireless remote temperature sensors, one door access sensor, and one wireless network gateway.



Likarda has been using the CoolSense for a few years to monitor all of our cold storage devices and laboratory environments. We implemented the system after learning how easy it was to purchase and deploy, and no professional IT background is required. It provides an inexpensive solution to a complex problem. The system is very much plug and play, simply to set up the wireless trackers and has great coverage across our labs. The app for iPhone makes it easy to track temperatures and receive alert notifications immediately.

CoolSense™ Sensors & Gateway

Sensor BCS-1100CS & BCS-5100CS		Specifications
Outdoor range (LOS)		800 m
Indoor range (typical)		100 m
Max unit		100 (Gateways + sensors)
Sensor BCS-1100CS & BCS-5100CS		Operation
Sensor LED:		
Off		Operational, in sleep
Steady green blinking		Open for pairing, 60 s
Green blink		Transmitting data
Blue		FW update in progress
Button:		
Short press, unpaired		Open for pairing, 60 s
Short press, paired		Send spot measurement
Long press 10 s until red		Sensor reset to default
Compliance		Meets EN12830**
Sensor BCS-1100CS & BCS-5100CS		Physical Specifications
Model no.		BCS-1100CS or BCS-5100CS
Size		99x50x21 mm
Weight		108 g (inc box + batteries)
Storage temperature		-35 to 60 °C
Operating temperature		-10°C to 85°C ±0.4°C
		-40°C to -10°C ±0.8°C
Operation humidity		0% to 80% < ±3%
		80% to 100% < ±5%
Battery Lifetime (15 min)		+2 year
LED		Tri-color
Probe Port Support		PB002-PRO
		PBDOOR-PRO
		PBPT100-PRO
		PBCO2-PRO
		PB001A / PB001B
		Compliance
North America		
Frequency Band		915 Mhz band
Certification		FCC, RoHS
Europe		
Frequency Band		868 Mhz band
Certification		CE, RoHS

Gateway BCS-5100CS & BCS-1100CS		Physical Network
Ethernet type		10/100
Ethernet connection		RJ45
Protocol		TCP/IP
IP allocation		DHCP
Ethernet LED		Green link / Yellow traffic
Gateway LED:		
Solid Green		DHCP & Cloud OK
Blinking Green		Open for pairing
Solid Red		No DHCP or Cloud access
Blue		FW update in progress
Blinking Blue		Open for slave pairing
Gateway BCS-5100CS & BCS-1100CS		Network Communication
IP allocation		DHCP
Cloud Endpoints		gk.sensorist.com
		54.229.68.147*
		54.229.203.190*
Ports		Outbound 4321 or
		Outbound 443
Traffic Direction		Only from inside to outside
Gateway BCS-5100CS & BCS-1100CS		Physical Specifications
Model no.		BCS-5100CS or BCS-1100CS
Size		80x80x23 mm
Weight		204 g (inc box, cable, PSU)
PSU		5v / 1A, 110v - 240 v
Storage temperature		-10 to 40 °C
Operating temperature		-10 to 40 °C
LED		Tri-color
Compliance		Meets EN12830**
		Notes
*		Subject to change
**		Enclosure IP20

Gateway: Can be updated OTA (over the air). First update on initial connection is necessary.

Sensor: Can be updated OTA (over the air). For sensor only recommend if wireless strength is above 25%. First update on initial pairing if necessary.

One year warranty applies to all Gateways, PSUs and Sensors. The warranty does not cover batteries for any of the products.

Support is available at <https://www.brookslifesciences.com/CoolSense>

Ordering Information

EXPLORER PACKS

Item No.	Description
BCS-1000CS	CoolSense Pro with 1 year cloud subscription
BCS-5000CS	CoolSense Pro with 5 year cloud subscription

SOFTWARE ONLY

Item No.	Description
318105	Gateway PRO
318109	Sensor Temperature & Humidity PRO
318112	Temperature Probe PRO
318112	Water Detector Probe PRO
318112	Door Contact Probe PRO
318112	PT 100/1000 Converter Probe PRO

ACCESSORIES

Item No.	Description
BCS-1100CS	CoolSense Gateway with 1 year subscription
BCS-1200CS	CoolSense Sensor for Temperature & Humidity 1 year subscription
BCS-1500CS	CoolSense Temperature Probe 1 year subscription
BCS-1600CS	CoolSense Water Detector Probe 1 year subscription
BCS-1300CS	CoolSense Door Contact Probe 1 year subscription
BCS-1400CS	CoolSense PT 100/1000 Converter Probe 1 year subscription
BCS-5100CS	CoolSense Gateway with 5 year subscription
BCS-5200CS	CoolSense Sensor for Temperature & Humidity 5 year subscription
BCS-5500CS	CoolSense Temperature Probe 5 year subscription
BCS-5600CS	CoolSense Water Detector Probe 5 year subscription
BCS-5300CS	CoolSense Door Contact Probe 5 year subscription
BCS-5400CS	CoolSense PT 100/1000 Converter Probe 5 year subscription



About Brooks:

Brooks is a leading worldwide provider of automation and cryogenic solutions for multiple markets including semiconductor manufacturing and life sciences. Brooks' technologies, engineering competencies and global service capabilities provide customers speed to market and ensure high uptime and rapid response, which equate to superior value in their mission-critical controlled environments. Since 1978, Brooks has been a leading partner to the global semiconductor manufacturing market as a provider of precision automation and cryogenic vacuum solutions. Since 2011, Brooks has applied its automation and cryogenics

expertise to meet the sample storage needs of customers in the life sciences industry, through Brooks Life Sciences. Brooks Life Sciences offerings include a broad range of products and services for on-site infrastructure for sample management at temperatures of 20°C to -190°C, as well as comprehensive outsource service solutions across the complete life cycle of biological samples including collection, transportation, processing, storage, protection, retrieval and disposal. Brooks is headquartered in Chelmsford, MA, with operations in North America, Europe and Asia.

Ordering Information

For ordering information please contact your local Brooks Life Sciences representative.

EU	Email: BLSS.Europe.Orders@brooks.com	Tel: Europe +44.0.161.777.2000
US	Email: BLSS.NA.Orders@brooks.com	Tel: North America +1.858.527.7080

Automated
Storage Systems

Cryopreservation &
Cold Chain Solutions

Informatics &
Technical Solutions

Sample Storage,
Lab Services & Transport

Sample Consumables
& Instruments

Learn more – www.brookslifesciences.com
Contact us – www.brookslifesciences.com/contact-us
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