CoolRack®Thermo-Conductive Sample Modules Compatible with CoolBox™30

Item	Product Description	Quantity	Accommodates
432034	CoolRack M6, gray	4	6 x 1.5ml or 2.0ml microfuge tubes
432035	CoolRack M6, green	4	6 x 1.5ml or 2.0ml microfuge tubes
432036	CoolRack M6, orange	4	6 x 1.5ml or 2.0ml microfuge tubes
432037	CoolRack M15, gray	1	15 x 1.5ml or 2.0ml microfuge tubes
432038	CoolRack M15, green	1	15 x 1.5ml or 2.0ml microfuge tubes
432039	CoolRack M15, orange	1	15 x 1.5ml or 2.0ml microfuge tubes
432041	CoolRack M30, gray	1	30 x 1.5ml or 2.0ml microfuge tubes
432042	CoolRack M30, green	1	30 x 1.5ml or 2.0ml microfuge tubes
432043	CoolRack M30, orange	1	30 x 1.5ml or 2.0ml microfuge tubes
432046	CoolRack M30-PF 500µl	1	30 x 0.5ml conical microfuge tubes
432047	CoolRack M15-PF	1	15 x 1.5ml conical microfuge tubes
432048	CoolRack M30-PF	1	30 x 1.5ml conical microfuge tubes
432049	CoolRack CF15	1	15 x cryogenic vials or FACS tubes
432052	CoolRack CFT30	1	30 x cryogenic vials w/ locking wells, or FACS tubes

CoolBox™30 cooling and freezing cartridges

Item	Product Description	Quantity
432079	-20° to 0°C Freezing cartridge, green, for CoolBox 30, 3pk	1
432080	+2°C Cooling cartridge, blue, for CoolBox 30, 3pk	1

Dimensions (L x W x H):

Internal (with cartridge loaded): 12 x 10.4 x 7.9 cm / 4.7 x 4 x 3.1 in
External: 16.5 x 15.25 x 12.7 cm / 6.5 x 6 x 5 in

⚠ CAUTION: The product described here are intended for the exclusive use by trained and experienced laboratory and medical personnel. A portion of the methods described require the use of dry ice. Direct skin contact with dry ice or metal components that have been touching dry ice can cause freezing injury. Always use appropriate protective equipment for eyes and skin when handling dry ice and cold metal components.

Made in USA.

CORNING | FALCON AXYGEN GOSSELIN PYREX

CORNING | CoolBox™30 Instructions for U

Overview of CoolBox™30 System

CoolBox 30 is a portable cooling system for maintaining cooling and freezing sample temperature on the bench top without ice. It is intended for use with a variety of CoolRack® tube modules. The design and thermal conductivity of CoolRack modules maintain samples at uniform well to well temperature throughout the cooling period regardless of sample position. By selecting from a number of cooling options, samples can be maintained within a temperature range from -78°C to 4°C. For a list of compatible CoolRack® modules, see last page.

Temperature Range	Cooling Source	Cooling Duration Open Lid	Cooling Duration Closed Lid
0.5°C to 4°C	+2°C Cartridge - Blue	Over 4 hours	Over 10 hours
-20°C to 0°C	-20°C to 0°C Cartridge - Green	Over 3 hours	Over 6 hours
-78°C	Dry Ice	Over 5 hours	Over 6 hours

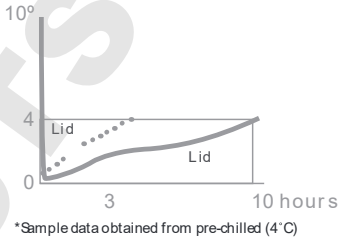
Actual performance may vary depending upon ambient temperature, start-up parameters, samp load, initial sample temperature, air currents, radiant energy sources and other conditions.

Using +2˚C Cartridge (Blue) for 0.5˚C to 4˚C

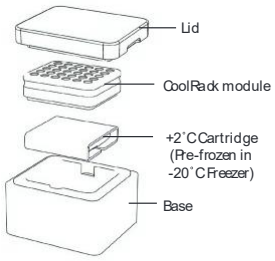
Freeze blue +2°C cartridge in a -20°C freezer for a minimum of four hours. Pre-chill the CoolRack® module to 0° to 4°C in a refrigerator for approximately 30 minutes. Remove cartridge from freezer and allow cartridge to sit at room temperature until the surface frost begins to melt (approximately 10 minutes). Place frozen cartridge in the CoolBox 30 base followed by a CoolRack module. Keep the lid on the CoolBox 30 to prolong the cooling durati

IMPORTANT: It is possible to also start with a room temperature CoolRack module placed directly onto frozen cartridge immediately after removing it from the freezer. The system w take approximately 20 minutes to equilibrate to approximately 4°C and will not undercool samples below 0°C.

For cooling beyond 10 hours, simply exchange the cooling cartridge with a freshly charged c

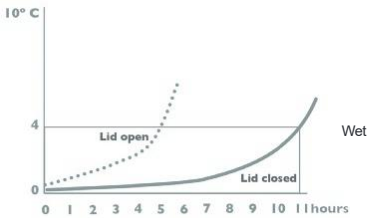


*Sample data obtained from pre-chilled (4˚C) CoolRack at approximately 18- 20˚C ambient room temperature.

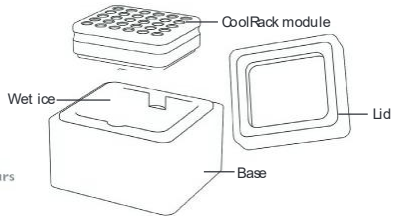


Using wet ice for 0.5°C to 4°C

When conventional ice cooling is needed, fill the CoolBox ™30 base with crushed ice. It is fine to slightly overfill the base as the CoolRack® module will settle quickly during initial cool down. Place a room temperature or pre-chilled (4°C) CoolRack on top of the crushed ice. Melting ice and ice-water will absorb heat from the CoolRack module and will continue to cool until all ice has melted - up to approximately 10 hours with lid closed.



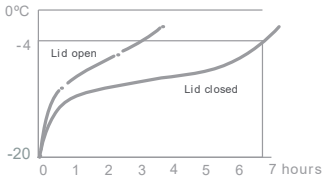
*Results may vary when room temperature exceeds 18-20˚C



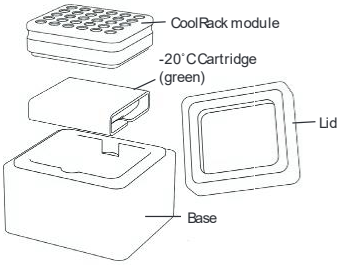
Using -20° to 0°C Cartridge (Green) at -20°C to 0°C

Freeze green freezing cartridge in a -20°C freezer for a minimum of 6 hours. Pre-chill the CoolRack® module in the -20°C freezer for approximately 30 minutes. Place frozen cartridge in the CoolBox 30 base followed by the pre-chilled CoolRack module.

For cooling beyond 6 hours, simply exchange the cartridge with a frozen one from the freezer.

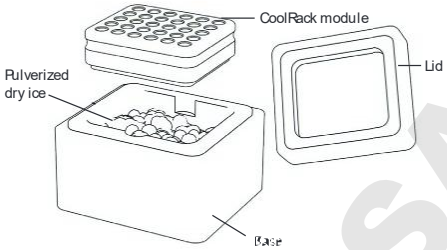


*Results may vary when room temperature exceeds 18-20˚C



Using Dry Ice for -78˚C

Fill the CoolBox 30 base with pulverized dry ice up to level with the bottom of the finger grip recesses as shown. Place a CoolRack® module directly onto dry ice. CoolRack module temperatures will quickly reach dry ice temperature in approximately 8-10 minutes. Closing the CoolBox 30 lid will not further decrease the CoolRack module temperature, however it w extend the cooling duration.



Temperature Measurement

The CoolRack module thermoconductive design ensures that all well temperatures are identical.

Test equipment

- Temperature probe with small thermal mass such as a K-type beaded thermocouple probe
- Digital thermometer to match probe
- Representative closed sample tube with cap

Test procedure

- Drill a small hole in the center of the sample tube cap with a diameter that provides a snu fit for the temperature probe wire so there will be minimal ambient air influx into the tub
- Fill the sample tube with 1.0 mL of water
- Place the cap on sample tube and insert temperature probe
- Place the instrumented sample tube in any well of the CoolRack module
- Rack temperatures can be measured by direct contact of the probe in any of the rack wells

Care and Cleaning

CoolBox ™30 is constructed from high density closed cell polyethylene foam. The CoolBox 30 base and lid are compatible with prolonged ultra-low temperature exposure. The foam may cleaned by water and mild soap. Rinse thoroughly. The CoolBox 30 is resistant to alcohols an 10% bleach solutions. Avoid abrasive or sharp objects. Do not use the CoolBox for pulverizing dry ice. Do not autoclave. Maximum temperature exposure: 60°C. Avoid exposure to UV ligh sources. The CoolBox 30 is not recommended for shipping of temperature-sensitive samples