

ORTEC®

X-COOLER™ II

The Next Generation in HPGe Detector Cooling Technology



More Powerful than Ever!

Replace Liquid Nitrogen with the X-COOLER II

- More Powerful than Ever
- No Limit to Detector Size
- For HPGe Detectors within a Wide Range of Gamma Spectroscopy Applications
- Compatible with All ORTEC HPGe Detector Types
- Lightweight and Compact Design
- Low Power Operation (less than 400 W)
- Field Replaceable: Retrofits to Existing Detectors and is Easily Maintained
- Cool HPGe Detectors Anywhere There's Electricity!
- No Dewar Filling Operations
- No LN₂ Safety Hazard
- No Bulky Storage Tanks or Unwieldy Plumbing Systems
- A Truly Economical Alternative to Liquid Nitrogen

X-COOLER™ II
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....Available Exclusively from ORTEC

Now There is No Limit to the Size of Detector that can be Cooled by Mechanical Cooling. . .

There is virtually no limit to the HPGe laboratory applications that can be optimized by mechanical cooling with the X-COOLER II. This exciting product extends the capability of mechanical cooling to any size detector!

That's right. . . any size detector!

The use of LN₂ has truly become a thing of the past!

. . . and you'll save money, time, and operating costs!

The annual cost of running an X-COOLER II can actually be less than that of an LN₂-cooled detector.

A Variety of Detector Options

X-COOLER II is designed to work with any ORTEC detector available in PopTop configurations. Degradation of resolution performance is guaranteed to be less than 10% for energies less than 500 keV, and no degradation will be observed above 500 keV.

Light on Cost, Weight and Size!

X-COOLER II is not only inexpensive to purchase and operate, but it is smaller and lighter than other devices of this type. The compact design boasts a footprint of less than one square foot (or 930 cm²), stands 11" (28 cm) tall, and weighs less than 36 pounds (16.4 kg). This compares very favorably to the previous generation of mechanical coolers.

Field Replaceable

Reliability and ease of service are essential to any mechanical cooling system for HPGe detectors. X-COOLER II systems employ the ORTEC patented¹ PopTop™ detector capsule technology. While the design life of the X-COOLER II is greater than five years, there is always the possibility of failure of any mechanical system. Because of the unique PopTop design of ORTEC detectors, an X-COOLER II can be replaced in the field, without special tools or procedures. After the detector has returned to room temperature, a new X-COOLER II can be installed in less than 10 minutes. The detector does not have to be returned to the factory to replace a faulty mechanical cooling system.

Retrofittable

The X-COOLER II can be retrofit in the field to existing PopTop detectors. Simply warm the existing detector, unscrew the capsule from the LN₂ cryostat, and couple onto the X-COOLER II.

You'll be up and running in no time!

Proven Technology

Traditional mechanical coolers fail because oil from the compressor mixes with the refrigerant, migrating to the heat exchanger and clogging it, thus causing the detector to warm up. The X-COOLER II's patented design cleans the oil out of the refrigerant continuously. Similar coolers using this design have logged over 38,000 hours (more than 4-1/4 years) of operation without failure... and still going.

¹ U.S. Patent No. 4,851,684

X-COOLER™ II

Specifications

Resolution: Coaxial detector specifications are warranted to *no* degradation above 500 keV and less than 10% degradation of the warranted and published LN₂ specifications at less than 500 keV. Planar detector specifications are warranted to no degradation above 500 keV and less than 20% degradation of the warranted and published LN₂ specifications at less than 500 keV.

Mechanical:

Dimensions:

Compressor: 12.5" W x 12.5" D x 11" H
(31.8 cm x 31.8 cm x 28 cm)

Cold Head Length with Detector Capsule attached:

Standard: 23.25" (59 cm)
Oversize: 24.5" (62.3 cm)
Ultra: 25.5" (64.8 cm)

Weight:

Compressor: 36 lbs. (16.4 kg).
Cold Head: 11 lbs. (5 kg) not including capsule.

Noise: Less than 70 dB at 1 meter.

Input Power: 110–120 V ac, 57–63 Hz or 220–240 V ac, 47–53 Hz (input power must be selected by choosing the appropriate model number, see ordering information).

Power Consumption: <500 W during initial cool down. <400 W during normal operation.

Connector Hose: 10 ft. gas hose connected between compressor box and cold head assembly is included. Longer lengths available on special request. Contact the factory for more information and pricing on other hoses.

Refrigerant: Mixed gas, CFC-free refrigerant. MSDS available on request.

CE Approved

Environmental

Ambient Temperature: 5–30°C (40–85°F).

Relative Humidity: 5–95% non-condensing.

X-COOLER™ II

Ordering Information

Model	Description
CFG-X-COOL-II-115	X-COOLER II with PopTop connector using 110–120 V ac, 60 Hz Input Power
CFG-X-COOL-II-230	X-COOLER II with PopTop connector using 220–240 V ac, 50 Hz Input Power
X-COOL-STAND	Omnidirectional Cold Head Stand (ideal when replacing 30 L dewar dipstick type cryostats)
X-COOL-RACKMOUNT	Cold Head Rackmount Bracket
CRYOSECURE	Programmable Compressor Power Controller (ensures that detector is fully warmed before commencing cooldown after power failure)
X-COOL-UPS-115	30 minute backup power system (1440 VA) for maintaining Mains power to the X-COOLER II during brief power outages. Input/Output power: 110–120 V ac, 60 Hz.
X-COOL-UPS-230	30 minute backup power system (1440 VA) for maintaining Mains power to the X-COOLER II during brief power outages. Input/Output power: 220–240 V ac, 50 Hz.
X-COOL-PK-115	Complete X-COOLER II Pumpout Kit. Includes valve operator, pump and gauge. Requires 110–120 V ac, 60 Hz Input Power.
X-COOL-PK-220	Complete X-COOLER II Pumpout Kit. Includes valve operator, pump and gauge. Requires 220–240 V ac, 50 Hz Input Power.
X-COOL-PK-ADPT	X-COOLER II Pumpout Kit Adapter Only.
X-COOL-FILTER	Replacement filters (pkg. of 12).



Specifications subject to change
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