



# Hybrid cooling for HPGe detectors Nicole

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## DESCRIPTION

The hybrid cooling system for HPGe detectors represents a significant advancement in cryogenic technology, combining the long-established reliability of liquid nitrogen with the efficiency and autonomy of electrically powered cryocoolers. This intelligent system ensures continuous detector operation for up to two years and more without refilling. Engineered for minimal vibration and ultra-quiet performance, it preserves excellent energy resolution. Integrated health monitoring, ensures reliable, low-maintenance operation. Its compact footprint and energy-efficient design make it ideal for laboratory applications.

## FEATURES

One of the main advantages of the Nicole hybrid cooling system is its exceptional ease of maintenance and service. The system provides a USB interface, allowing users to access all operational parameters. Most key parameters are also displayed on the LCD screen. In the event that maintenance, repair, or replacement of the cooler is required, the cooling unit can be dismantled in just 15 minutes. This enables the user to continue measurements using only liquid nitrogen—an especially critical feature when routine measurements cannot be interrupted.

## ADD-ONS

The hybrid cooling Nicole is available with an adapter to accommodate HPGe detectors with two diameters of cryostats (cold fingers): 32 mm and 38 mm, or 1.25 inches and 1.5 inches

## NOTICE

Nicole hybrid cooling is available for the following HPGe detector cryostat modification:

- Vertical
- Horizontal
- L-type
- U-type

| Parameter                                                                            | Value                          |
|--------------------------------------------------------------------------------------|--------------------------------|
| Type of Stirling-cycle cryocooler                                                    | Pulse-tube                     |
| Nominal Cooler Input Power                                                           | < 140 W                        |
| Power Supply                                                                         | AC 220V                        |
| Dewar vessel volume                                                                  | 28l                            |
| Liquid nitrogen holding time when cryocooler is operating (period between refilling) | 12 - 18 months and more        |
| Cryocooler MTBF                                                                      | > 80000 h                      |
| Maximal liquid nitrogen productivity                                                 | 60 gr/h                        |
| Able to accompany vertical dipstick cryostat with diameter                           | 1,25"                          |
| Loss of nitrogen in case of non-working electrical cooling                           | < 3l/day                       |
| Dimensions                                                                           | Height 650mm<br>Diameter 440mm |
| Operating temperature                                                                | 0°-40°C                        |
| Humidity                                                                             | 20% - 90% without condensation |