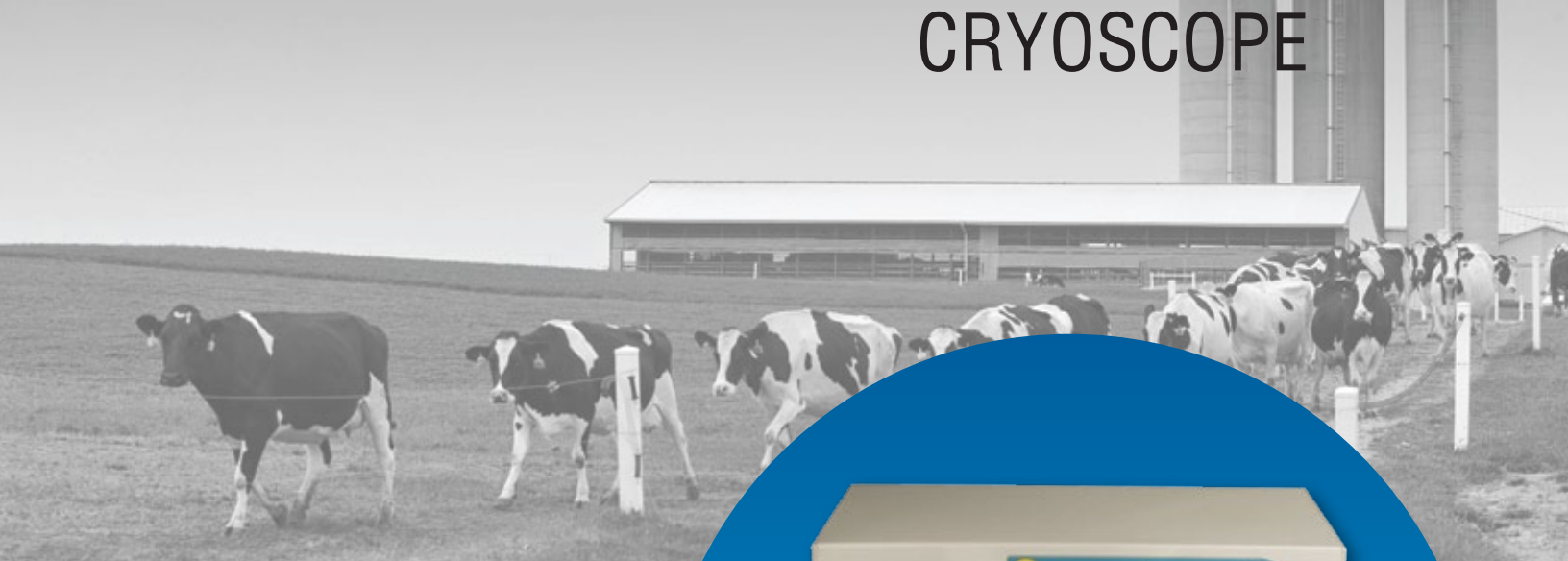


# QuickCheck™ QC-IV/GR

CRYOSCOPE



**Simple, Rapid and  
Reliable Results  
for added water in milk.**



**DEDICATED ANALYTICAL TOOLS: DAIRY SUPPLY CHAIN**

**QuickCheck™ QC-IV/GR** CRYOSCOPE

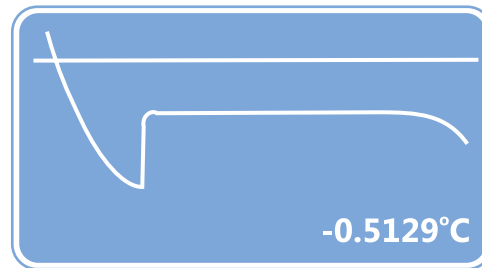
## Accurate, Precise Screening for Added Water in Milk

Testing for adulteration of milk in accordance with current international reference methods (see ISO 5764:2009, IDF 108:2009 and AOAC), the QC-IV/GR provides ultra-accurate results in ~ 90 seconds.

## Flexible, Reliable and Affordable!

Confirming consistent quality by testing for extraneous water resulting from accidental or purposeful contamination is important for producing safe, quality product and maintaining brand-name recognition. Rely upon the test the industry has trusted for years: Freezing-Point! The robust, modular construction of the Model QC-IV/GR is designed to provide you with years of dependable service. User-friendly operation ensures that real-time results are ready anytime; on demand! Whether your testing

needs are for payment purposes, product development, production monitoring or simply to confirm positives from screening tests, the QuickCheck cryoscope offers steadfast accuracy and unwavering precision to faithfully fulfill a wide variety of requirements.



A graph charting the actual freezing point curve, in real-time for each sample tested, is displayed on the readout display. This provides in-depth insight helpful for a multitude of purposes, including troubleshooting and Research & Development.





## Quick, Affordable Quality Screening Test



A practical rapid method for confirming the integrity of milk, the QuickCheck provides critical feedback throughout the supply chain, from confirming proper protocol in milking parlor maintenance to completion of system cleaning and/or product changeovers in the dairy plant:

**Dairy Farmers:** Confirm proper milking parlor maintenance (i.e. draining of lines) following cleaning. Screen for excessive condensation in bulk tank. Spot added water that may contain trace minerals that can cause off-flavors.

**Cheesemakers:** Obtain information essential to maintaining consistent quality and realizing optimal yields by testing incoming milk and/or confirming formulation of special milk blends.

**Small to Mid-Sized Processors:** Meet regulatory requirements regarding extraneous water in milk for payment and safety purpose. Ensure the integrity of milk from incoming QC to final QA.

## TRUST THE TEST

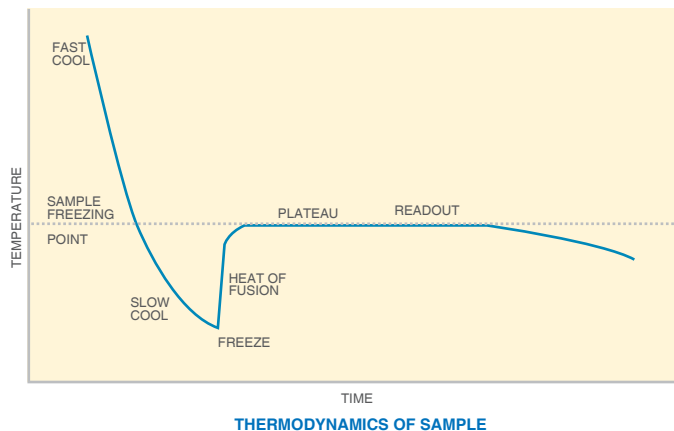
the Dairy Industry Has  
Depended Upon for Decades!

## A Purchase Decision that Pays Off!

- ✓ Facilitate confirmation of adulteration using this instrument-based test that works in conformity with the recognized reference methods (ISO/IDF/AOAC). Enjoy optimal records for payment or punitive action purposes.
- ✓ Accurately assess water balance to a molecular level in milk blends and recipes for value added products like cheese or yogurt. Standardize recipes and ensure strong yields and profitability.
- ✓ Rapidly screen to detect abnormal composition (i.e. minerals such as iron, sulfites or copper) or possibility of elevated bacteria that can lead to off-tastes.
- ✓ Monitor automated milking tubes and bulk tanks; spot quality problems in raw milk due to improper drainage or maintenance in the milking parlor.
- ✓ Monitor lactose hydrolysis for consistent outcomes.



## Theory of Operation: Freezing-Point



## A Constant Physical Property: Freezing-Point

Freezing-point is one of the four colligative or interrelated physical characteristics of a solution. As the mammary glands maintain an equilibrium between the osmotic balance of blood and milk, the Freezing-Point of milk is a constant that varies only within very narrow limits.

If water is added to genuine milk, the freezing point moves closer to "0". Therefore, freezing-point depression (or FPD) has been recognized as the method of choice throughout the industry for detecting the presence of extraneous water in milk.

The principle of operation is that of the internationally recommended reference method for added water testing:

- ✓ A sample of milk is supercooled below the freezingpoint in a carefully controlled manner.
- ✓ The freeze-buzz is initiated and the sample warms to the actual freezing-point.
- ✓ When the sample reaches the true freezing-point a plateau forms, which the cryscope monitors.
- ✓ The freezing-point is reported when the plateau meets the criteria established by the reference method.

**P&P provides results-oriented solutions to the dairy and food industries. Focusing on innovative technologies that meet real requirements, we identify unique instrument-based solutions and bring them to the food, dairy and bio-tech firms around the globe at an exceptional value.**

**For more details about our "fit for purpose" solutions to your needs, we invite you to visit us on the web at: [www.pagepedersen.com](http://www.pagepedersen.com)**



## Page & Pedersen International, Ltd.

158 West Main Street Hopkinton, MA 01748 USA

Tel: 508-435-5966, Fax: 508-435-8198, E-Mail: [info@pagepedersen.com](mailto:info@pagepedersen.com)  
[www.pagepedersen.com](http://www.pagepedersen.com)

## QuickCheck™ Specifications:

### Testing Parameters:

|                      |                            |
|----------------------|----------------------------|
| Freezing-Point Range | 0 to -1000 m°C or m°H      |
| Sample Capacity      | Single Sample              |
| Sample Size          | 2.5 ml                     |
| Test Time            | < 2 minutes                |
| Repeatability        | ± 0.002 °C                 |
| Resolution           | ± 0.0001 °C                |
| Linearity            | < ±0.5%                    |
| Readout Units        | °C or °H                   |
| Start-Up time        | ~10 minutes                |
| Calibration          | 2 points (User Selectable) |

### Electrical Parameters:

|                   |                      |
|-------------------|----------------------|
| Line Voltage      | 110/220V ( ± 10%)    |
| Line Frequency    | 50/60 HZ             |
| Power Consumption | <125 Watts           |
| Main Fuse         | 110V - 3A, 220V - 2A |

### Environmental:

|                         |                        |
|-------------------------|------------------------|
| Ambient Air Temperature | 15°-38°C (59°- 100° F) |
| Sample Temperature      | 4°-35°C (39°-95°F)     |
| Relative Humidity       | 30-80%                 |

*\*Environments with ambient temperature >30°C (86°F) only with Amplified Performance Module*

### Technical Data:

|                        |  |
|------------------------|--|
| Dimensions (W X H X D) | 38 x 28 x 33 cm,<br>15" x 11" x 13" (inches) |
| Weight                 | 16.4 kg (36 lbs)                             |
| Shipping Weight        | 24.5 kg (65 lbs)                             |
| Connection             | PC/USB to Memory Stick                       |

### The QuickCheck™ Start-Up Kit Contains:

QuickCheck™ Milk Analyzer, Model QC-IV  
 Sample Tubes  
 Calibration & Control Solutions  
 CryoCool™ Heat Transfer Fluid  
 Stainless Steel Sample Tube Rack

### Options:

LactiPrinter™ Thermal RS-232 Portable Printer  
 LactiPrep™ Sample Rocker  
 QuickCheck™ Amplified Performance Cooling Module