

CherryTemp™ Temperature Control System for *C. elegans*

From Cherry Biotech

CherryTemp™ Temperature Control System for *C. elegans*



10' sec
TEMPERATURE SHIFT



5 to 45°C
TEMPERATURE RANGE



0.1°C
TEMPERATURE PRECISION

Meet the world's fastest heating & cooling stage for *C. elegans*.

The CherryTemp™ System enables ultra-fast temperature shifts in the 5-45°C range. You can now control temperature for your experiments with ultra speed and precision.

The CherryTemp™ System allows you to:

- Perform temperature shift experiments with *C. elegans* (embryos, larvae, or adult worms) with unprecedented speed and precision.
- Control your favorite molecular processes in real time, observe dynamic events linked to temperature change in live *C. elegans* and discover new phenotypes.
- Maintain worms at a precise temperature during experiments despite fluctuations in room temperature or other variables.



Ultrafast: 10 seconds temperature shifts



Wide temperature range – heat and cool samples between 5-45°C



High Precision at 0.1°C

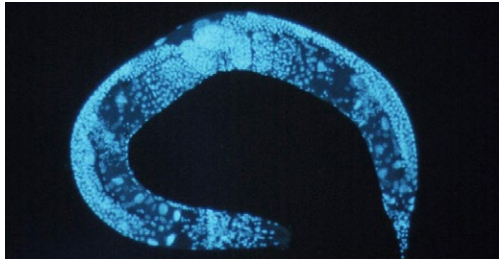


Precise and stable for long-term observations



A plug & play platform compatible with any microscope

CherryTemp™ Applications



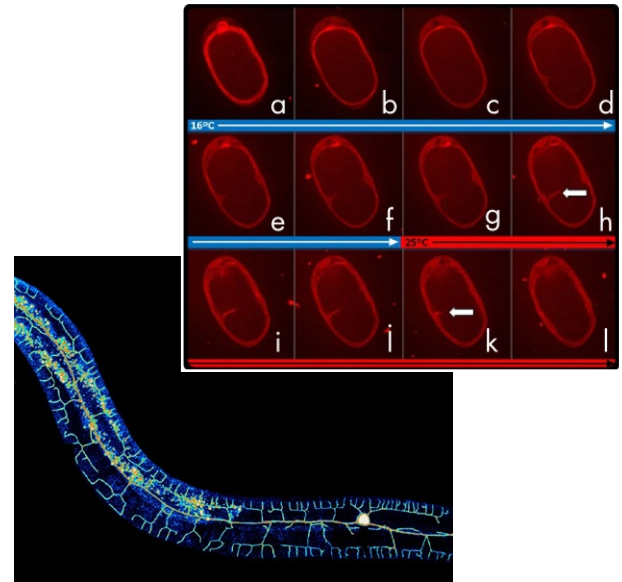
C. elegans Pack

- Compatible with all stages of C. elegans (embryos, larvae or adult)
- One-click temperature shift and stability from 5 to 45°C
- No shear stress for your worms

Cytokinesis Dynamic Control

- Rapidly reverse the temperature of your sample
- Observe how rapid mechanisms are affected by temperature
- Capture images and videos right as the temperature switch happens (Protein aggregation, Cellular dynamics, Ion channels)

Image on the right: Temperature sensitive embryos (CYK-4 ts mutants) were mounted on the CherryTemp platform for imaging. By changing the embryo's temperature from 16°C to 25°C within 10 seconds, we were able to observe the arrest and reversal of cytokinesis, a phenomenon impossible to observe with other slower temperature control platforms (arrows show the membrane invagination that marks the beginning of mitosis (h), as it reverses, 3 minutes after the temperature shift.)



CherryTemp™ Temperature Control System Setup

CHERRYLOOP

- For controlling temperature & stability

TANK BOTTLE

- For holding liquids

CHERRYTEMP

- For controlling temperature

HEAT EXCHANGERS

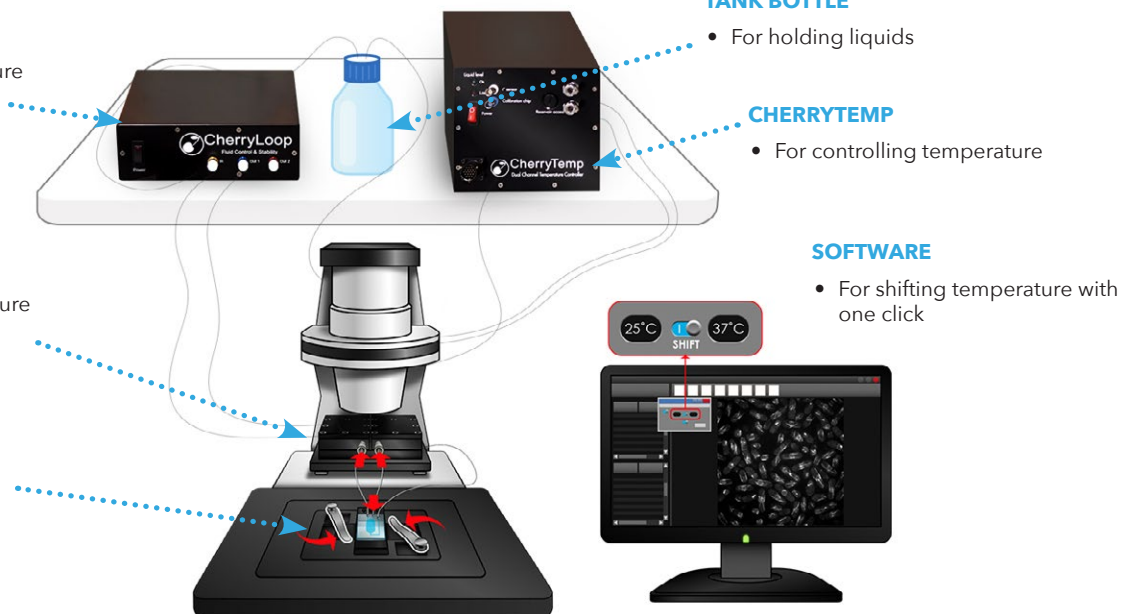
- For transferring temperature

SOFTWARE

- For shifting temperature with one click

MICROFLUIDIC CHIP

- For holding your sample



CherryTemp™ Temperature Control System Specifications

CherryTemp System

PARAMETERS	FEATURES
CherryTemp box dimensions (mm); Weight	270 (L) x 190(W) x 170 (H); 4.5kg
CherryLoop box dimensions (mm); Weight	210 (L) x 210 (W) x 70 (H); 4.4kg
Heat exchanger dimensions (mm); Weight	86 (L) x 54 (W) x 22 (H); 0.4kg
Input current and voltage	16A; 12-24V nominal
Power supply	120V-60Hz /230V-50Hz (US/EU)
Inserts for inverted microscopes	Customized adaptations/designs to fit all main microscopes models
Chip holders for upright microscopes	25 x 75mm standard
Thermalization Chips	24/60mm PMMA transparent
Petri dish chips (format under beta-testing programs)	35mm

Temperature Control

PARAMETERS	FEATURES
Temperature range	5-45°C (can be extended)
Temperature sensor types & electronic control	Class A Pt100 & performance-optimized PID (no overshoot)
Temperature precision	+/- 0.1°C
Temperature sample homogeneity*	< 0.5°C
Temperature absolute accuracy**	+/- 0.3°C

*Sample homogeneity measured by infrared camera and 4-points probes method. **Accuracy determined by 4-points probes method

Software & User Interface

PARAMETERS	FEATURES
Software	Light & intuitive software
Computer specifications	2 x USB 2.0 or faster, Intel Pentium II 500MHz or faster, 2Go disk space, Windows 10 recommended (7 and latest)
Specific calibrations	Dry objective lenses, immersion objective lenses and heat sink compensation
Quality control	Gemini© sequences embedded in the software.

Sample

PARAMETERS	FEATURES
Thickness	Up to 500 µm
Volume	From 1µl to 2ml depending on the mounting method used. See methods & packs.

Learn more about the CherryTemp™ System at
www.nemamatrix.com/cherrytemp-system