

The Nano-Plotter™ Chiller System (Option)

Evaporation problems? Sensitive Samples?

The GeSiM Nano-Plotter™ Chiller System helps you solve these problems in an easy way, so you can focus on tasks that are really important. It consists of a micro-plate cooling system and a slide deck cooling system (the latter one available for the Nano-Plotter NP 2.x only).

The GeSiM Micro-Plate Cooling System

GeSiM developed the Micro-Plate Cooling System as a solution for evaporation problems that is both easy-to-use and cost effective. It is basically a metal chuck that fits inside the GeSiM Nano-Plotter instrument and can hold a standard microtiter plate (96 and 384 wells). The GeSiM Micro-Plate Cooling System is normally connected to the cooling liquid circle of an external cooling thermostat. A digitally controlled recirculation thermostat can be provided by GeSiM.

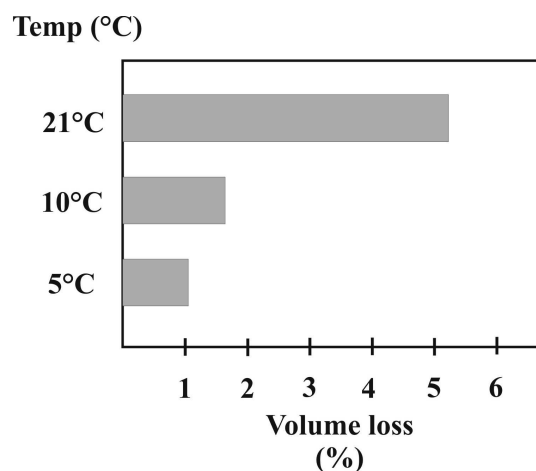


Figure 1. The micro-plate chuck (left). Its metal body is passed through coolant. The cooling effect can be seen in the right diagram.

The GeSiM Micro-Plate Cooling System was tested by long-time exposure of filled microtiter wells to different temperatures of the cooling chuck at constant relative humidity (36 %). Cooling from room temperature (21 °C) to 5° C results in a 5-fold reduction of evaporation (see diagram in Figure 1).

Sample stabilization and cell growth inhibition

As the GeSiM Micro-Plate Cooling System allows you to keep your samples at low temperatures, it will not only keep your precious samples hydrated for an extended period, but also limit thermally induced denaturation of your samples when the microtiter plate is exposed to room temperature for prolonged times.

All information is subject to change without notice.

Low temperatures might also be advantageous when you work with living cells in micro-plates (as it is often the case for, e.g., yeast). In this case, the low temperature delays cell growth and thus avoids the pipetting of cells in different growth phases.

The GeSiM slide deck cooling system

Sometimes speed matters. The shape of spots and the binding of biomolecules onto solid supports depend on the target surface and the way how the samples dry. Drops become spots by evaporation and the drying speed may dramatically influence the final spot morphology.

The slide decks of the Nano-Plotter™ NP2.x models can connect to a cooling thermostat in the same way as the micro-plate chunk does. Additionally, all slide decks contain a temperature sensor to maintain constant slide temperature during varying ambient conditions. Together with our humidifier, dispensing at the dew point and thus extremely slow evaporation can be achieved, if necessary.

The temperature of the slide deck does not change when the lid is opened.



Figure 2. The removable slide deck can be easily released from the tubes of the thermostat (e.g., for loading/unloading). The one shown here, an extended one, is used in the Nano-Plotter NP 2.0/E, and contains small (removable) knobs to align the slides.

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