

Heating, Cooling & Shaking



Thermoshake AC & Classic

Unique heating and cooling shaking solutions

Compact 'all-in-one' heating/cooling/shaking

Unique heating, cooling and shaking solution with optional automated clamping for robotic integration

Product description

The INHECO Thermoshake is the first device available for use on robotic workstations, that combines heated shaker functionality with active cooling. A new version with automated labware clamping and higher shaking performance is now available. Compared to the classic Thermoshake, the new Thermoshake AC is equipped with a stronger shaker motor resulting in higher shaking frequencies and higher load capacity. In addition, it was fitted with a newly developed clamping mechanism to facilitate the use of a wide variety of disposable formats and to increase process reliability.

The Peltier based heating/cooling function operates independently of the shaking system. The temperature transfer to the plate locator is managed by a small liquid loop inside the Thermoshake. Consequently, the reduced weight of the shaking plate makes it possible to achieve higher shaking frequencies with a longer lifetime for the Peltier unit due to the avoidance of shaking vibrations. The Peltier cooling is ideal for use at ambient room conditions, as it counters the typical self-heating found on almost all other shakers.

Application areas

The Thermoshake has a minimal footprint and is such as one of the most compact heating/cooling/shaking solutions for standard ANSI/SLAS plates or other reagent container formats. Temperature-sensitive samples can be fully processed on one deck station without the need for plate transfer, making it ideal for platforms without a gripper.

The shaking plate is easily accessible by most of the robotic grippers to load and unload the Thermoshake. A variant of the classic Thermoshake - called Thermoshake RM - is available for Tecan's Freedom EVO® and Fluent® platforms for use with Tecan's Robotic Manipulator Arm (RoMa) system. The Thermoshake AC is also compatible with the RoMa.

Our shakers are plug-and-play high performance heating & cooling devices with CE and UL certification. An adapter for Flat Bottom Plates is integrated.

Features

- Heating, cooling & shaking in one device
- Temperature range: 4 °C to 70 °C
- Selectable orbital or linear shaking patterns
- AC model: orbital shaking only
- Active clamping of disposable (AC model)
- Zero positioning function for comfortable robotic gripping
- For standard ANSI/SLAS format plates and tubes
- No self-heating, enabling accurate incubation at ambient conditions
- Shaking frequency: 100 to 2,000 rpm (300 to 3,000 for AC model)
- AC model: customized clamping rods for different labware



Thermoshake Classic, 7100146



Thermoshake AC, 7100160



Clamping rods, 7100160

Product	Part No.	Dimensions W x D x H (mm)	Shaking frequency (rpm)	Temperature range
Thermoshake Classic	7100146	104 x 147 x 118	100 - 2,000	4 °C to 70 °C
Thermoshake RM ¹⁾	7100144	104 x 147 x 116	100 - 2,000	4 °C to 70 °C
Thermoshake AC	7100160	104 x 147 x 115	300 - 3,000	4 °C to 70 °C

¹⁾ For Tecan RoMa gripper, 2 mm lower in height, blue brackets

Main specifications

Specifications	7100146 & 7100144	7100160
Accuracy at 37 °C target temperature ¹⁾	±0.3 K	±0.3 K
Uniformity at 37 °C target temperature ¹⁾	±0.3 K	±0.3 K
Max. rpm ²⁾	2,000	3,000
Amplitude (mm)	2	2
Input	24 Vdc	24 Vdc
Ambient temperature	15 °C to 32 °C	15°C to 32 °C

¹⁾ Data refer to 96 well flat bottom microplate at 22 °C ambient temperature

²⁾ rpm depends on shaker load, max load 500 g



INHECO Measurement Plate, 7901000

The Thermoshake was successfully integrated in a number of established lab automation systems, including:

Beckman Coulter: Biomek i5, i7, 4000, NX, FX, Genomic Workstations

Beckman Coulter: Access Laboratory Workstation

Biosero: Acceleration Lab

Hamilton: Vantage, Star Line, Nimbus

HighRes: Prime™

Opentrons Labworks: OT-2

PAA: S-CEL™ Laboratory Workcells

PerkinElmer: Janus, Sciclone, Zephyr

Tecan: Cavro Magniflex, Fluent, Freedom EVO

Thermofisher: inSPIRE™

Verification plate

INHECO offers a compact and precise measurement plate (IMP) in ANSI/ SLAS format for verification of temperature and/or shaking performance. The IMP can be used on heating, cooling & shaking devices and inside incubation chambers. Please refer to the IMP brochure for more information.



MTC Compact, 8900029
Multi TEC Control (MTC), 8900030
Single TEC Control (STC), 8900031

Controller and accessories

For single Thermoshake units, the power supply and temperature setting/control is performed through the INHECO Single TEC Control unit (STC). For multiple (up to six) INHECO heating & cooling devices – incl. Thermoshake – an INHECO Multi TEC Control unit (MTC, with display) or MTC Compact (no display) is used and each device is controlled individually. A slot module is required to connect the Thermoshake to the STC/MTC.

For optimal temperature transfer an adapter – except for flat bottom plates – is always needed. On our website, you will find a list of existing adapter variants for a broad range of disposables with or without insulation. In case you need an adapter for your disposable which is not yet on the list, we offer to custom design and manufacture it on request.

Accessories

Product	Part No.
MTC Compact	8900029
Multi TEC Control (MTC)	8900030
Single TEC Control (STC)	8900031

Product	Part No.
Black Slot Module	2400125
Yellow Slot Module (AC)	2400211
Cooling fluid	3800053

Adapter plates¹⁾

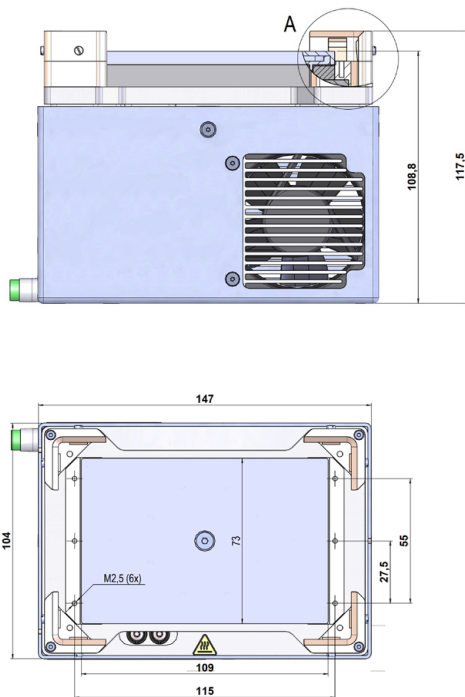
Product	Part No.
96 well PCR plate	3201085
384 well PCR plate	3201086

¹⁾ Over 100 adapters are available for perfect fit of a wide range of disposables, as listed on www.inheco.com. Customization available on request

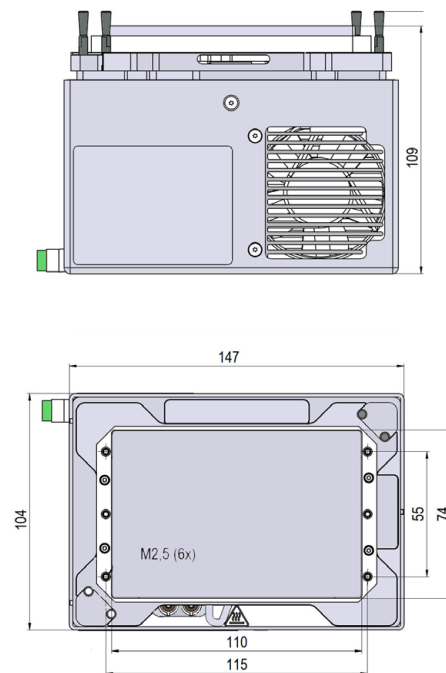
Visit us on www.inheco.com

Drawings

*Thermoshake Classic, 7100146**



Thermoshake AC, 7100160



*7100144 positioning bracket is 2 mm lower

Alternatives

For the heating-only Shaker, refer to the Heating & Shaking brochure (Teleshake 95 and Teleshake 95 AC)