Verification

IMP

Inheco Measurement Plate

Verification Tool IMP

Verify your lab equipment and make sure that it works as it should

INHECO Measurement Plate - IMP

Product Description

Verify „all-in-one" temperature, humidity and shaking pattern of ANSI/SLAS format devices from INHECO and other brands, both for instruments integrated into liquid handling systems, or stand-alone devices. The cordless design of the tool makes it easily usable even in closed incubator systems or readers. Data can be read out in different ways (USB or IrDA) and analyzed with the provided software.

The IMP software enables a thorough analysis of the measurements regarding temperature, humidity and shaking performance. The measurement profile can be easily pre-adjusted for each run, by connecting the IMP via USB to the PC. The IMP software allows to individually set and adjust such parameters like „measurement duration", „scan interval for sensors" etc.

Reliable temperature measurement is achieved by 10 sensors distributed over the flat measurement area including the 4 corners, the center and random positions in between. Another sensor records the ambient temperature, ambient humidity and a three-axis acceleration sensor determines the shaking speed, amplitude and pattern. In closed systems, the IMP can be used between 4 °C and 60 °C. On open systems, temperatures up to 100 °C can be monitored.

7901000 INHECO Measurement Plate

Features

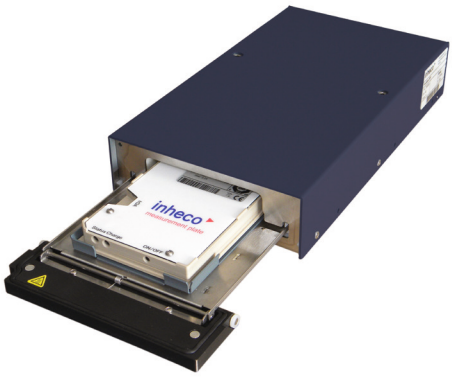
- „All-in-one" verification: Temperature, humidity, shaking
- Records shaking pattern, RPM & amplitude for QC purposes
- Measures humidity inside incubators
- Also suitable for plate readers
- Flexible data transfer via USB or IrDA
- Cordless design allows measurement in closed systems
- easy automated handling by common gripper systems
- Alternative Data storage internal on EEPROM
- Export of data in CSV format for customized evaluation
- IMP data analysis software for thorough analysis of measurements

Scope of delivery

The temperature and shaking evaluation software is included in the IMP package.
The manual, quick start guide, and evaluation software are stored on the MicroSD Card.

The heated/cooled surface of the plate locator to be tested needs to be flat for a reliable verification process, otherwise a flat bottom adapter is required to establish a proper thermal contact between the plate and the IMP. The IMP can be ordered with NIST/DAkkS calibration that is done by accredited calibration laboratories. Temperature and shaking calibration is done independently. Annual re-calibration is recommended.

The IMP comes with a flat bottom contact surface. The temperature of INHECO's heaters and coolers (HeatPAC, CPAC) are usually verified in combination with a flat bottom adapter. The heating cooling shaker (Thermoshake) is measured without adapter. Adapters for other formats, such as 96 well PCR plates, are available on request.
Adapters are listed on page 3.

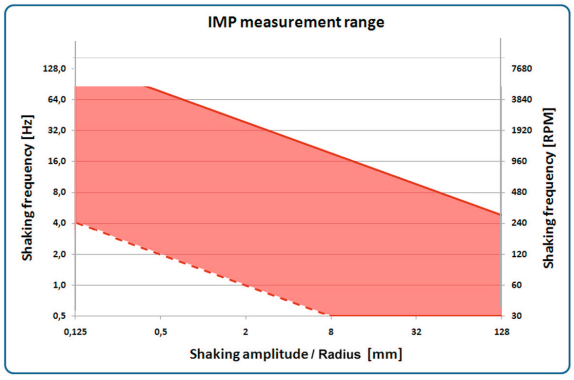


7300003 Incubator MP with IMP

Product	Part No.	Dimensions W x D x H (mm)	Weight	Tempera-ture range
IMP	7901000	87.5 x 128 x 15	100 g	4 °C to 60 °C
Temperature calibration NIST/DAkkS	7901002			
Shaking calibration NIST/DAkkS	7901003			

Main specifications

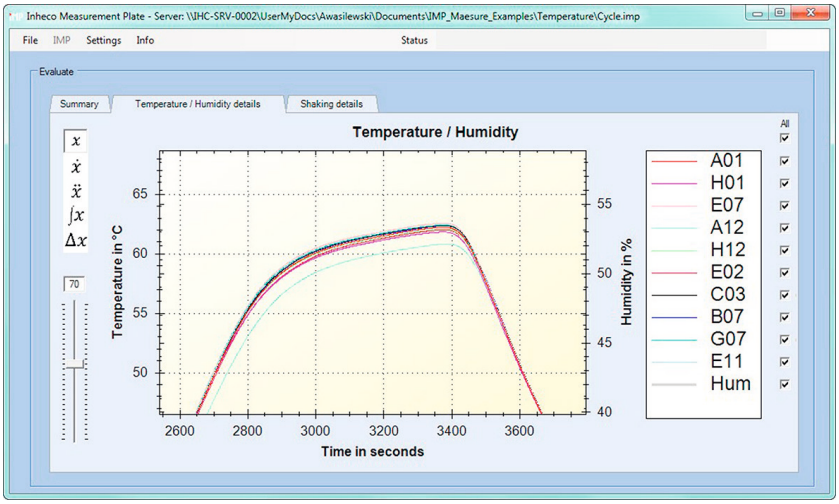
Specifications	7901000
Interface (besides Micro-SD-Card)	USB (1.1 / 2.0 / 3.0), IrDA
Temperature sensors at contact surface	10 sensors
Temperature precision of one sensor	± 0.03 K
Ambient temperature sensor	1 sensor
Accuracy amplitude	± 10%
Accuracy RPM	± 5%
Relative humidity 0%-10%, 91%-100%	± 4%
Relative humidity 11%-90%	± 2%
Temperature range	4 °C to 60 °C and for 60 °C to 100 °C contact INHECO
Max. # measurement points (without µSD)	10,000
Run-time battery in operation*	approx. 16 hours
Temperature uniformity (calibrated)	± 0.1 K
Temperature uniformity @60 °C on Flat Bottom**	± 0.3 K
Temperature accuracy*** (calibrated)	± 0.1 K
Temperature accuracy*** @60 °C on Flat Bottom**	± 0.8 K



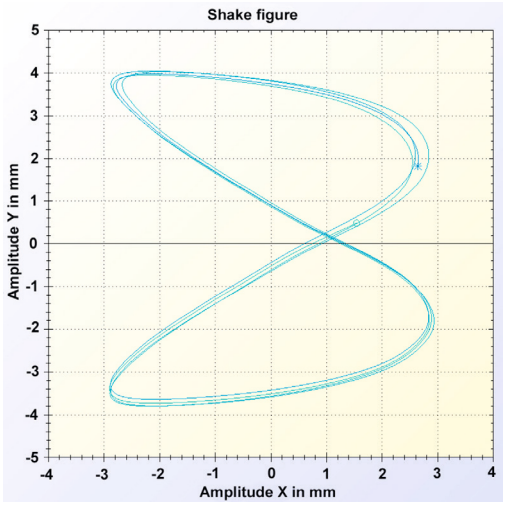
Shaking measurement range

* at ambient temperature
** measured at 60°C on a Flot Bottom Adapter with a CPAC unit
*** mean value of all 10 sensors

Example Features of Evaluation Software



Example of a temperature graph



Example of a shaking graph

Accessories*

Product		Part No.
Flat Bottom Adapter	Heater/Cooler (HeatPAC, CPAC)	7900016
Flat Bottom Adapter	Heating Shaker (Teleshake 95)	Scope of supply

* Custom adapters available on request

7900016 Flat Bottom Adapter

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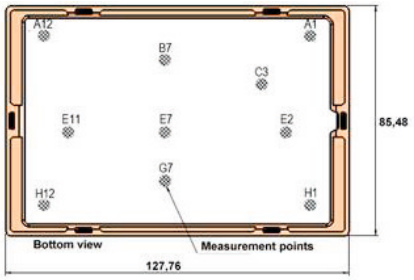
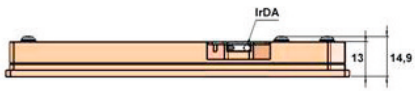
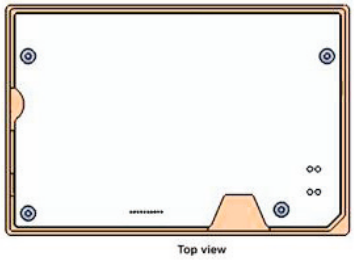
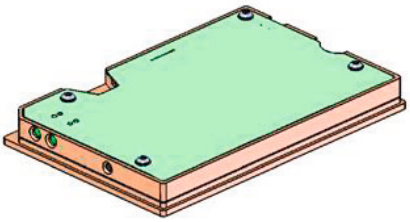
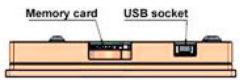
Drawings

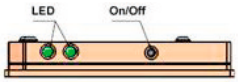


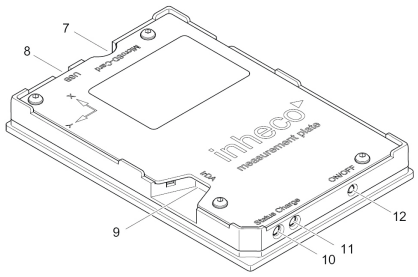












(7) Micro SD-Card Holder
(8) USB Connector
(9) IrDA Interface
(10) Status LED
(11) Battery Charge LED
(12) ON/OFF Switch

INHECO GmbH Fraunhoferstrasse 11 82152 Martinsried / Germany +49 89 89 95 93 -120 sales@inheco.com