

## Temperature and humidity mapping

simple and  
effective  
temperature  
and humidity  
monitoring

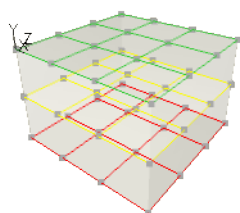


# Temperature and humidity mapping

## INTRODUCTION

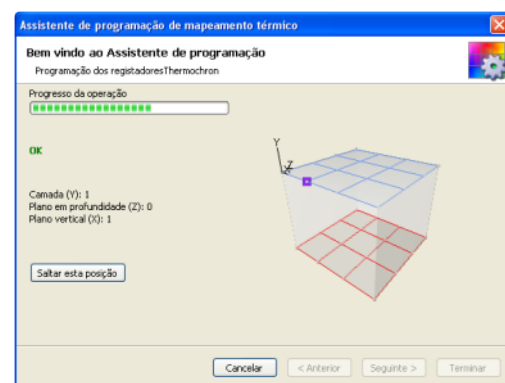
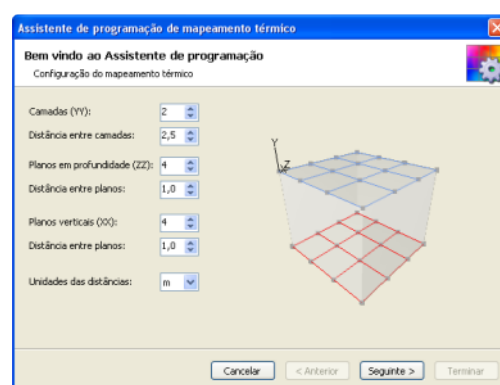
The variation of temperature and humidity inside a volume becomes extremely relevant in some applications such as: fresh produce refrigeration units, pharmaceutical warehouses, calibrated refrigerators and even industrial dryers.

The analysis of the distribution and changes during a time interval provides deep knowledge about the process, validate it and even undergo improvements.



## APPLICATIONS

- Refrigerators performance analysis
- Industrial drying
- Testing of insulated thermal boxes
- Packaging cooling
- Thermal treatment studies
- Validation of calibrated refrigerators



## TEST SETUP

Thermochron® and Hygrochron® loggers, because of their small size, can be placed almost anywhere. Being completely autonomous, they don't require any physical connection when logging data, which presents a tremendous advantage over cabled sensors such as thermocouples or PT100.

All test procedures, since programming to the data retrieval, takes place in quick operations, relieves the operator of deploying and working with lots of cables, which is rather common in this type of tests.

Using ExpressThermo software, with the help of a wizard, all parameters and settings are selected: deployment grid or mesh for the loggers, in two or three dimensions, sample rate and resolution. After programming each logger, they can be deployed expediently and the test is ready to begin in a very short time.





## TEST ANALYSIS

After the test is completed the logged data is collected and the ExpressThermo software processes it and generates a three-dimensional map.

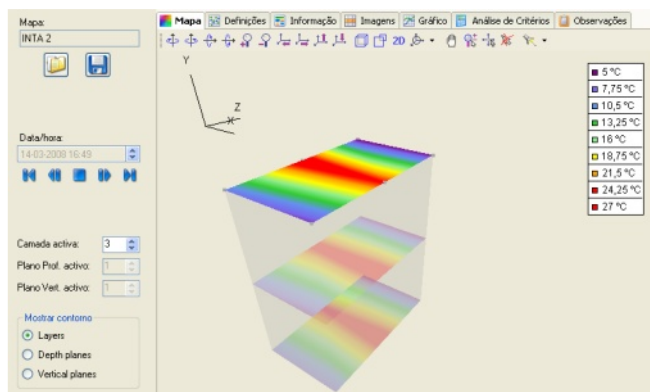
The viewing tool is rather powerful providing the user with lots of useful features: zoom, vertical and horizontal layers, pan, rotation, animation, automatic or manual range definition, among others.

The task of preparing a test report is eased with images of map screen shoots, user comments and a layout editor.

## SUMMARY

Thermochron® and Hygrochron® loggers, together with ExpressThermo software, open new and vast possibilities in temperature and humidity mapping.

The loggers low cost, the ease of test setup and data collection along with a powerful analysis tool, are unquestionable arguments when selecting a test system for this application.



## TEMPERATURE

Temperature mapping in 2D and 3D.



## HUMIDITY

Humidity mapping in 2D and 3D. Simultaneously with temperature, as an option.



## WIRELESS

Thermochron and Hygrochron loggers work free of cables, thus saving precious time in setup, deployment and later data collection.



## ANALYSIS AND REPORTING

ExpressThermo software provides powerful analysis and report generator tools.

## A ECLO

Eclo it's a technological Portuguese company leader in R&D+i of systems for the agro-food industry. Their equipment and solution offers are divided in three main areas:

- Temperature and humidity monitoring systems based in the Thermochron, Hygrochron and iBTag loggers and ExpressThermo software;
- Traceability information management system for the agro-food industry: ExpressTrace;
- Monitoring system for concrete maturity.

Besides the standard off-the-shelf solutions, Eclo has can develop turnkey projects. The most demanding project to date in our custom solutions portfolio was a logistic tool for the largest Argentinean fruit exporter. The system manages temperature, humidity and operational information for their daily operations by road and sea.

Eclo maintains a technological and strategic partnership with Maxim Integrated Products, Inc. — manufacturer of the Thermochron and Hygrochron — and develops all the system to use the loggers. It's the only company in the Iberia Zone that working with this loggers with Authorized Solutions Developer status granted by Maxim, Inc.



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