Environmental Monitoring Solutions

GIDAS-TEA
Thermal Environments Application

The program GIDAS-TEA calculates the most known and internationally recognized microclimate indices (heat and cold stress and thermal comfort). GIDAS -TEA is divided into three modules:

Module for moderate environments (thermal comfort)
It calculates thermal comfort indices to assess the gap between the most comfortable situation and the current thermal conditions:

- PMV Predicted Mean Vote (ISO7730)
- PPD Predicted Percentage of Dissatisfied (ISO7730)
- DR Draught Rating % (ISO7730)
- OT Operating Temperature

Module for cold environments (thermal stress-cold)
It calculates the cold stress indices, useful when the body's thermoregulation system intervenes to reduce the potential excessive drop in body temperature:

- IREQ Insulation Required (ISO11079)
- IclReq Clothing Insulation Required (ISO11079)
- Dlim Duration Limited Exposure and DRec Recovery Time (ISO11079)
- TWC Wind Chill Temperature

Module for hot environments (heat stress)
It calculates heat stress indices, useful when health risks as heat strokes may occur due to high temperatures:

- Inside/outside WBGT Wet Bulbe Globe Temperature (ISO7243)
- PHS Predicted Heat Strain (ISO 7933:2023)

The software, in one part number (BSZ318), includes the three modules.
In GIDAS-TEA, the licence of GIDAS-Viewer for data visualization (*see MW9006-ENG-04-GIDAS-Viewer-BSZ311*) is included.

- Modules for Moderate, Hot and Cold thermal environments
- Database for environments, subject and measurements
- Charts and tables of measurements
- Configurable data reporting
- Simulation and calculator features
- Lite function for quick one-position analysis
- GIDAS-Viewer (BSZ311) licence included

Main features

Module for data logger configuration and data download
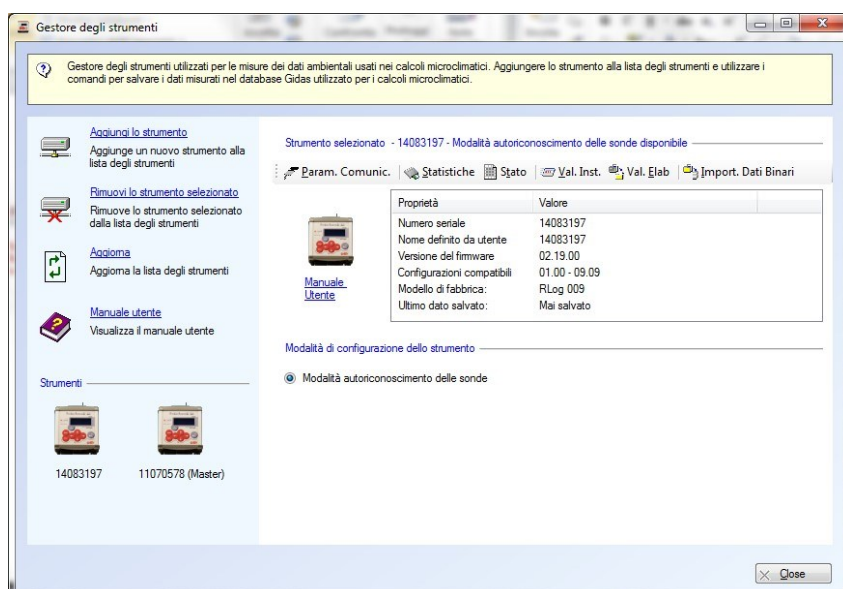
- GIDAS-TEA includes a functionality that, according to the available sensors, sends the most appropriate configuration to the data logger (M-Log) to carry out microclimate surveys. It also includes a specific function for data download without the use of 3DOM

Managing surveys, stations and measured items
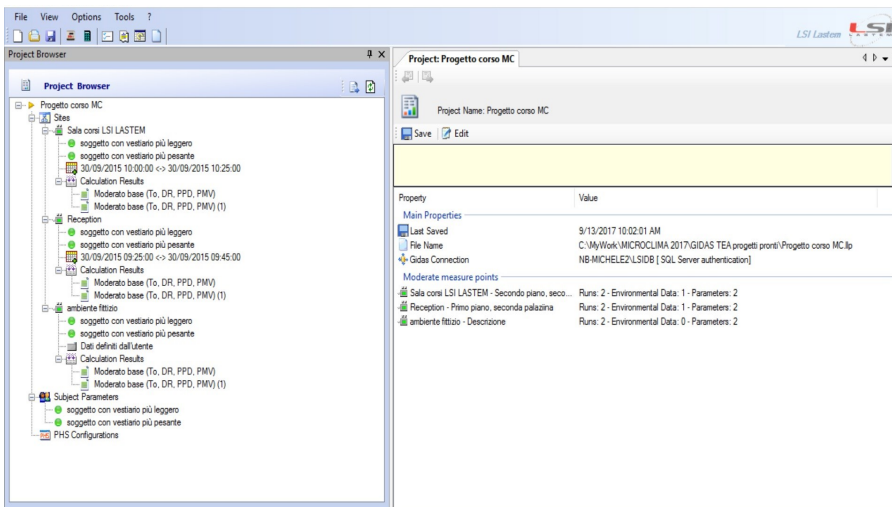
Surveys browser: it is possible to memorize the measurements according to configurable physical environments and types of subjects, so that they are easily traceable and repeatable over time using the same logic.

- M-Log data-logger can record measurements as "surveys". Each survey is identified by a number and its date/time of start/end of the measurement. GIDAS-TEA records surveys and allows separate microclimate analysis
- Setup and storing of the positions where surveys have been carried out, including description as site, building, environment, measurement position
- Subjects setup: clothing (Clo), metabolic rate (Met) and efficiency (%). These information are obtained from stored tables in GIDAS-TEA which report values from ISO standards

Survey analysis per position
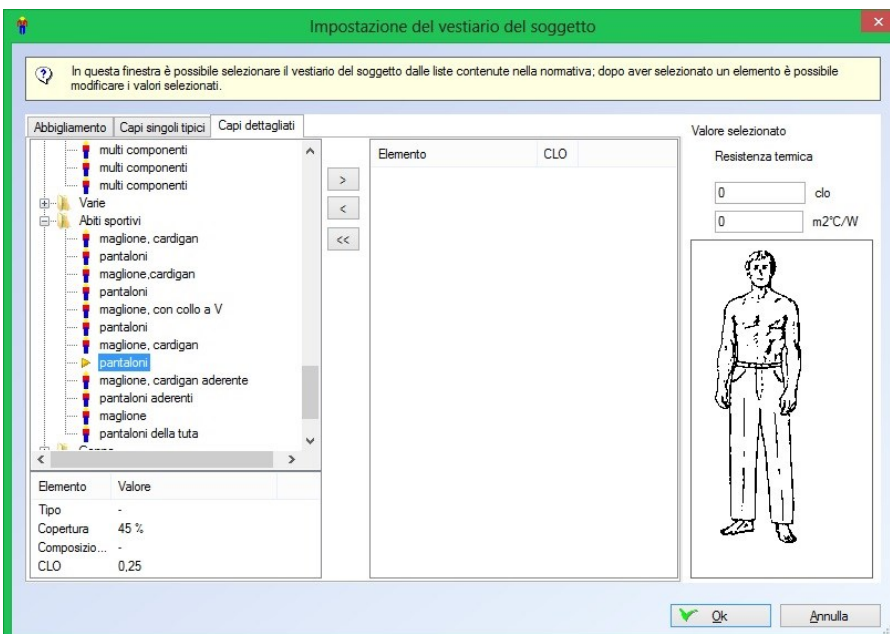
Subject configuration:

Once the position is configured, it is possible to match the surveys and carry out the microclimate indices analysis for each related subject. GIDAS-TEA tracks all the results obtained in the same position over time. This is useful to monitor dynamic changes over time, depending on the microclimate conditions and the different analysed subjects.

Report of data

- Creation of charts and tables using environmental measurements and calculated indices for each subject in each position
- Automatic creation of final reports with information about position of measurements, free texts, tables and charts. Report in docx or open office xml format (ECMA-376)

PHS index (Hot environments Module)

The PHS index (Predicted Heat Strain) described in the ISO7933:2023 standard, allows to analyse the working and resting environments and provide working and resting cycles to the worker to avoid heat stress situations according to the limits.
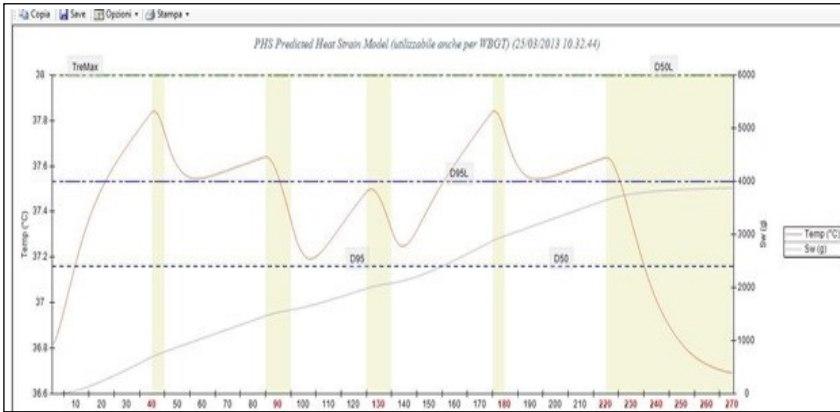
▶ *GIDAS-TEA program creates charts and tables to detect the minute in which the limit is exceed and how long the subject should stay in the resting environment before coming back into the working one.*

Simulation and Calculation features

▶ *Simulation feature: it is possible to replace one or more measured environmental quantities with a fixed value, in order to simulate the value of the microclimate indices. This feature also helps to choose, in case of equal quantities coming from different sensors (common situation in multi-measurement networks) which sensor/measure use for a specific calculation.*

▶ *Calculator: it is possible to set specific estimated values for environmental quantities and to provide results of indices in those dynamic conditions. It is possible to change each specific value to check how the index values could change in different conditions. Results can be exported as ASCII or Excel files.*

GIDAS-TEA Lite

▶ *Simplified function to carry out microclimate analysis over a single survey (single point, single subject):*

- *Data download from the connected data logger*
- *Data display in easy and fast way*
- *Direct calculation of microclimate indices: selection of the survey, setup of the subject parameters and correspondent result achievement (PHS index not included)*

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