

The LSI LASTEM weather station in the Campo Alta Quota Project, at the service of science on Mont Blanc



ALL IN ONE Weather Station for Campo Alta Quota Project on Mont Blanc



Excellent monitoring at 3500 meters above sea level

From 3 to 5 December 2024, Mont Blanc hosted the second edition of the **Campo Alta Quota** project, an important scientific experimentation campaign promoted by the Italian Army. The initiative had the objective of scientifically evaluating the **performances of military personnel** and materials and equipment subjected to extreme conditions and high psycho-physical stress, the result of the combination of high altitude and low temperatures.

In this context, the **University of Milan** used the LSI LASTEM **ALL-IN-ONE weather station** to monitor weather conditions in an extreme environment.

Advanced technology for extreme conditions

The LSI LASTEM ALL-IN-ONE weather station was installed next to the Alpine base camp, at an altitude of 3500 metres, to collect fundamental data on atmospheric variables. This instrument made it possible to detect **air temperature, relative humidity** and **incoming solar radiation** in real time, contributing to the monitoring of environmental conditions that influence activities on the glacier.

A collaboration between research and innovation

The initiative involved researchers from different disciplines. In particular, the **Department of Environmental Sciences and Policies** and the **Department of Agricultural and Environmental Sciences** of the State University of Milan used the weather station to combine the data collected with the application of environmental and body micro-sensors. This made it possible to evaluate the performance of the military and the materials used in extreme conditions, optimizing operations, the insulation of the materials and improving the energy efficiency of the equipment.

The importance of weather data in training camp

The environmental conditions on Mont Blanc represent a unique challenge. The station proved to be important in guaranteeing a scientific basis for the numerous tests carried out by the military, such as overnight stays in tents and prolonged movements on the glacier. Thanks to the data provided, it was possible to support studies on acclimatization and adaptation to altitude on cold-related physical stress, conducted by the **CNR** and other scientific institutions.

Innovation at the service of the environment and safety

The use, among other instruments, of an LSI LASTEM meteorological station in an ambitious project such as Campo Alta Quota, highlights the importance of using reliable and innovative instruments for research in hostile environments. This example demonstrates how **environmental monitoring** can support science, innovation and operational safety in complex scenarios such as those of high altitude mountains.