



terraXcube		re-engineering
Temperature	8888 °C	
Relative humidity	8888 % r.H.	
Absolute pressure	8888 mbar	
Altitude	8888 m	
O ₂ concentration	8888 %	
CO ₂ concentration	8888 ppm	
Wind speed	8888 m/s	

USE CASE

How powerful is your product?

Get to know your product better!



terraXcube

terraXcube is Eurac Research’s extreme climate simulation center at the NOI Techpark in Bolzano, South Tyrol, Italy. Within its chambers, even the most extreme environmental conditions on our planet can be created. By combining hypobaric and altitude technology with state-of-the-art environmental simulation, we aim to investigate the effects of extreme climate conditions on humans, ecological processes and industrial products. The climate chambers differ in size and equipment and can accommodate people, plants and other living organisms for up to extended periods and have the space to accommodate large machines and products. Each day our team breaks new ground with scientists and industry partners and prepares the path to gain discoveries.

Put your product through its paces in our Large Cube. Does your air conditioning system ensure maximum cabin comfort at low temperatures and at an altitude of 4680 meters? Are your windshields and headlights defrosted in the shortest possible time even in sub-zero temperatures? Find out with a “performance test” in our Large Cube. Our experienced team is on hand to support you in defining test scenarios and throughout the entire test cycle. Entire machines and devices such as drones, heat pumps, construction and off-road vehicles as well as individual components such as headlights, windshields and batteries.

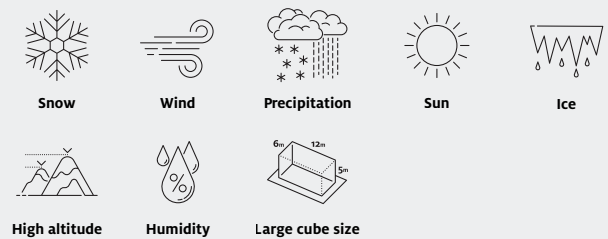
To test the **comfort of cabins**, for instance spaces for drivers and passengers, we expose the cabin to very high and low temperatures. We then check how long it takes to cool down or heat up the cabin using the air conditioning system in the cabin. If cabs are tested in isolation, for example without the vehicle’s engine, we can recreate heating and cooling circuits. If you want to know what outdoor conditions your product’s air conditioning system can withstand, you can also test this with us – in accordance with ISO standard 14269-2:2006.

To study the **effectiveness of de-icing measures**, we can generate extreme cold and wind. We can apply ice to the test object – from one or all sides, as required. The particle size of the drops to be iced can be varied, thus influencing the ice property. The ice-air mixture is produced in a controlled manner, and all the necessary parameters are recorded. After the de-icing tests have been carried out, we can provide you with video footage of the de-icing process.

In addition, we are able to test drones of different sizes and power classes, including individual components such as rotors, batteries, controllers and motors. Altitude cold and icing can be generated in a controlled manner, and the tractive force of the drone can be measured.

In the Large Cube, we are able to simulate extreme altitude – up to 9000 meters – and extreme weather phenomena. This means you don’t have to take your test object to the extremes, we deliver them directly to your prepared test setup.

The test in a nutshell:



Measures:

The interior dimensions of the Large Cube are 12 m × 6 m × 5 m (L x W x H). The total available area is 137 m² plus 100 m² for test set-up. The entrance to the test chamber is formed by a wing gate with the dimensions: 3.6 m × 4 m (W x H). The maximum size of the test object can be 10 m x 3.6 m x 4 m (L x W x H).

Accredited tests:

[Tests accredited by Accredia](#) according to the following standards:
CEI EN 60068-2-1:2007, IEC 60068-2-1:2007
Environmental testing: Cold
CEI EN 60068-2-2:2008, IEC 60068-2-2:2007
Environmental testing: Dry heat
IEC 60068-2-13:2021 Environmental testing:
Low air pressure,
IEC 60068-2-39:2015, CEI EN 60068-2-39:2016
Environmental testing: Temperature and low air pressure



LAB N° 1785L



Technical data:

Temperature: -40...+60°C

Relative humidity :10 % – 90 %rH

Maximum simulated altitude: 9000 m

Air pressure: 95 kPa – 33 kPa

Wind: 0 m/s – 30 m/s

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