

# ENVIRONMENTAL CHAMBERS



## State-of-the-art environmental and altitude simulation chambers

— Custom designed or pre-packaged range

— Tight environmental condition controls

— Simulation scheduling available

— Accelerated Testing

— Data Collection



Australian manufactured solutions



Local maintenance team



Over 50 years of experience in HVAC cooling solutions



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to learn more

[www.heuch.com.au](http://www.heuch.com.au)

# Unique Solutions

Hand-selected base materials and protective finishes to ensure your equipment suits your local environment and process application.

Heuch Cooling Solutions specialises in designing and building Environmental (Full Climate) Chambers for customers who require a unique environment for sports science, human performance, athlete acclimatisation, university research, and defence applications.

Each room is custom-built to simulate various environmental parameters to achieve complete and ideal weather conditions.

Our custom solutions can include

## CONTROLS AND EQUIPMENT FOR:

- Humidity
- Temperature
- Hypoxic or simulated altitude (O<sub>2</sub> and CO<sub>2</sub>)
- Positive and negative pressure environments
- Containment
- Climate simulation
- Wind
- Solar



## PRODUCT OPTIONS



**Cooling and Heating Control:** Environmental chambers use an electric heater and refrigeration unit to control temperature. Larger chillers may be needed for very low temperatures. The system maintains a set temperature by adjusting the heater or cooling as required.



**Humidity Control:** Environmental chamber humidity control uses steam generators and dehumidifiers, depending on the target humidity. By maintaining a constant dew point and air temperature, the system ensures stable relative humidity (RH).



**Hypoxic (Oxygen) Control:** Hypoxic chambers simulate high-altitude environments by lowering oxygen levels. Ambient air is filtered to reduce oxygen and then supplied to the chamber. These chambers enhance altitude adaptation, improving athletic performance, endurance, and overall fitness.



**Wind Control:** Wind control systems simulate wind speeds for athletes, ranging from 0 to 12m/s, in both fixed and program modes. With indoor training equipment like treadmills, the need for wind simulation has grown. Universities now develop low-noise, stable, and programmable wind simulators for research and training.



**Radiant Heat (Solar) Control:** Solar radiant heat impacts athletic performance. The solar simulator recreates sun radiation (400 to 1200W/m<sup>2</sup>) for athlete training in fixed or program modes. Studies show endurance decreases as solar radiation increases in hot environments.

# Custom-built temperature solutions for precise performance

Achieve precise data gathering and testing in the most extreme conditions imaginable.

## HME RANGE

### Heuch Pre-Packaged Environmental Chambers

- ✓ Pre-packaged chambers based on a set room area
- ✓ Designed for sporting clubs and training facilities
- ✓ 3m x 6m or 3m x 12m room sizes
- ✓ Allows general control of the following options:
  - Cooling between -20°C and 10°C
  - Heating between 40°C and 55°C
  - Humidity control
  - Hypoxic (oxygen) control between 0m and 7000m
  - Wind control
  - Radiant heat (solar) control



## HCE RANGE

### Heuch Custom Environmental Chambers

- ✓ Custom designed high spec chambers
- ✓ Designed for sports science and universities
- ✓ Any room size available
- ✓ Allows tight precise control of the following options:
  - Cooling between -20°C and 10°C
  - Heating between 40°C and 55°C
  - Humidity control
  - Hypoxic (oxygen) control between 0m and 7000m
  - Wind control
  - Radiant heat (solar) control



## HCE RANGE

### Heuch Military Environmental Chambers

- ✓ Custom designed high spec chambers
- ✓ Designed for defence
- ✓ Any room size available
- ✓ Allows tight precise control of the following options:
  - Chemical dispersion
  - Cooling between -20°C and 10°C
  - Heating between 40°C and 55°C
  - Humidity control
  - Hypoxic (oxygen) control between 0m and 7000m
  - Wind control
  - Radiant heat (solar) control



## OUR RANGE

### HME RANGE

The HME Range of Climate and Test Rooms are customised designs that are built for military applications such as personnel armour testing, and military vehicle climate testing. These chambers are built to a high military spec that allows for many variables such as chemical warfare resistance and extreme climate conditions.

### HPE RANGE

The HPE Range of Environmental Rooms are standardised designs that are built for sporting clubs and training facilities that are wanting to test the limits of their athletes or acclimatise them before the next big game away from home.

### HCE RANGE

The HCE Range of Climate Rooms are customised designs that are built for sport science and universities that are wanting tight controls on all environmental conditions for data gathering and research purposes. These climate rooms are built to a higher standard than the HPE Range to allow high accuracy climate variable controls that maximise data collection.

### Standard Configurations

- Control Panel
- Security alert system.
- Power failure emergency lighting, escape exit indicator
- Inner and outer room PA communication
- Inner and outer room emergency stop button
- Inner and outer room data synchronisation display system



# POINTS OF DIFFERENCE

- Custom designed range
- Pre-packaged range
- Tight environmental condition controls
- Simulation scheduling
- Accelerated Testing
- Cost Savings
- Data Collection

## OUR EXPERTISE IN CLIMATE CHAMBERS

With decades of experience, Heuch is the only company in Australia with the breadth of expertise to design and build such specialised environmental chambers. We have successfully delivered numerous projects across the country, backed by a local team of highly qualified & experienced engineers and technicians. Our Australian-based facilities not only ensure high-quality service but also ongoing support and maintenance.

## COMPREHENSIVE SERVICE AND SUPPORT

Heuch's customer service doesn't end with installation. We extend our support by offering programmed maintenance services, ensuring the smooth running and longevity of our installed systems. With a single call, our expert team is ready to assist with any questions or service requirements.

We urge you not to compromise on quality when it comes to defence climate control systems.

Get in touch with Heuch today on 1300 001 952.

## INDUSTRY APPLICATIONS

- Sport Science and Research Facilities
- Defence
- Sporting Clubs and Training Facilities



*This Environmental Test Chamber & associated equipment was designed, constructed, installed & commissioned by Heuch. The Environmental Test Chamber was featured in a segment of ABC's Catalyst program, presenting the Chambers use as a testing environment for Australian Defence Force uniforms.*

## TRUSTED BY THE BEST

At Heuch, we pride ourselves on delivering reliable and innovative temperature control solutions that meet the exacting standards of some of the world's leading institutions. Our environmental chambers have been trusted across various industries, from research laboratories to high-demand manufacturing environments, ensuring precise conditions for critical processes. When the best need precision, they turn to Heuch.



## CONTACT US FOR MORE INFORMATION

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