



iQ-Climate Chamber

User Manual

June 9, 2022





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1 INTRODUCTION

Important information: Read the manual carefully before using the device.

Inappropriate utilization may cause damage to the device, to the DUT (device under test), and/or other components of your setup.

Keep these instructions in a safe place and pass them on to any future user.

1.1 Intended use

A climate chamber to test camera systems in different temperature settings.

Only suitable for indoor use.

1.2 Foreseeable misuse

1.2.1 Hot/cold surfaces

When using the climate chamber, the interior, the window, and the metallic surfaces of the window may become very cold or hot.

Use caution near the camera window while handling your equipment inside the iQ-Climate Chamber.

We suggest bringing the Chamber back to room temperature before removing or manipulating your DUT.



1.2.2 Risk of tipping over

The iQ-Climate Chamber has a relatively high center of gravity.

While the rolling cart is designed to stabilize the Chamber, you can still make it tip over with considerable force.

Use caution when using ramps to move the Chamber.



1.2.3 Risk of improper orientation

The iQ-Climate Chamber must be kept upright all the time.

Do not “lay it down,” even for transportation.

2 GETTING STARTED

2.1 Scope of delivery

- Climate Chamber
- Rolling Cart with wheels + hot air blower + switch box
- Screws and tools to fix the Chamber to the cart
- Power cables
- UCM - Universal Camera Mount
- Manuals
- USB-Stick with manuals and software



2.2 Setting up for operation

2.2.1 Assembling the iQ-Climate Chamber

The iQ-Climate Chamber has been removed from its rolling cart for transportation.

It has to be mounted back on before use.

Note:



The iQ-Climate Chamber is very heavy (>160 kg), so use at least four able-bodied helpers and caution when lifting/moving.

Start by setting the rolling cart on the ground and fixing its brakes.

See Figure 1 for how to properly align the Chamber to the cart.

Now slowly pull the iQ-Climate Chamber out of the box and put it on the ground.

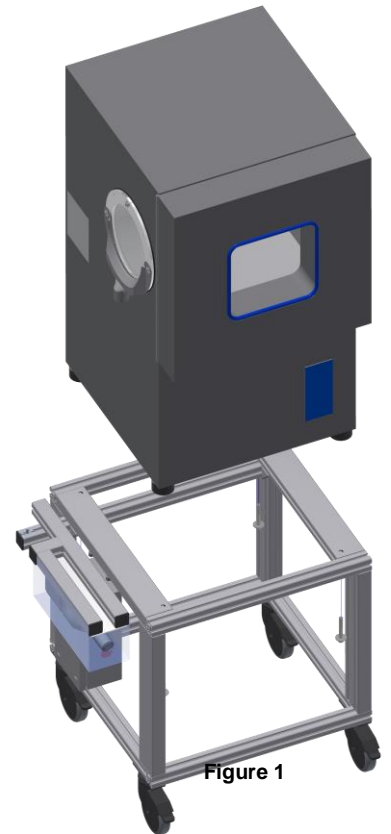
Position all helpers around the Chamber, ensure everyone has a grip, and slowly lift the Chamber.

Move it above the cart and ensure the four rubber pads are on the profiles and roughly above the holes.

Align the Chamber so that the rubber pads are above the screw holes.

Screw in the 4 M10 screws with washers.

When all screws are in, tighten them with the hex key.





2.2.2 Connecting the hot air blower

Once the Chamber is fixed to the cart, remount the hot air blower.

Unwrap it and slide the screw into the profile.

Make sure it is oriented, as seen in figure 2.

Then use the hex key to tighten the screw and fix the hot air blower.

Finally, connect the flexible tube.



Figure 2



2.2.3 Power supply

The iQ-Climate Chamber has two separate power cables, one for the Chamber itself and one for the heater.

The standard variant requires 220 - 240V 50Hz.

The theoretical maximum power consumption of the iQ-Climate Chamber and the hot air blower is 2.2 kW each.

However, the typical power consumption is much lower (<1kW total), so you can connect both power cables to a single circuit with a 16A fuse.

On request, we also offer a variant for 110V 60Hz with different motors and a power converter.

Important note:

Do not use the iQ-Climate Chamber with the wrong voltage, even with a power converter.



The motor of the compressor runs on line frequency, and running the device on the wrong frequency may cause permanent damage.



2.3 Using the UCM and adjusting your camera

The iQ-Climate Chamber is shipped with a UCM (Universal Camera Mount).

This tool allows you to adjust and align your device inside the Climate Chamber.

For further details, please refer to the manual of the UCM.

The primary adjustment should be made by moving the iQ-Climate Chamber. Move it to be parallel to and centered on your test target. Use the UCM for fine adjustments,

The camera should be centered and aligned behind the camera window.



Figure 3: Camera centered on the UCM

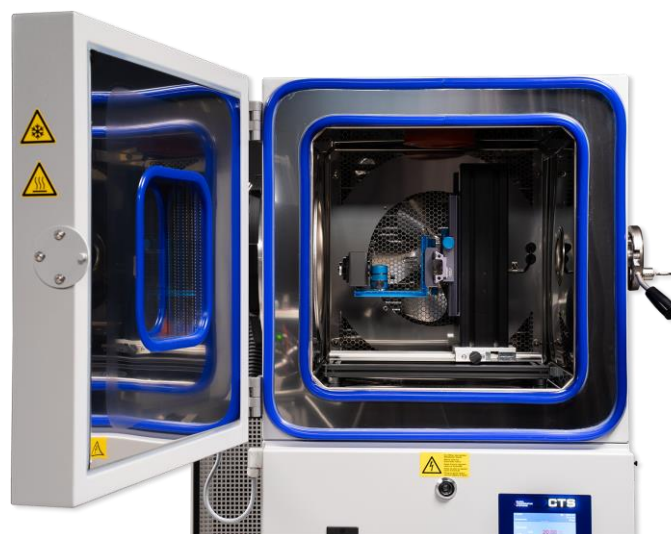


Figure 4: UCM inside the chamber



2.4 Connection cables for the DUT

If you need cables connected to your DUT, use the rubber plug opposite the camera window.

Small cables can be put through the hole and then sealed by the plug. For larger cables, the plug can be drilled.



Figure 5: Plughole and plug



3 OPERATING THE IQ-CLIMATE CHAMBER

The iQ-Climate Chamber can be operated manually via the touchpad and remotely with a windows computer.

3.1 Temperature range

The iQ-Climate Chamber has been designed to be used for temperatures ranging from **-30°C to +120°C**.

The Chamber allows you to set higher temperatures of up to 180°C. However, we do not recommend using the maximum temperature as higher temperatures may damage the camera window or the UCM.

Using temperatures higher than 120°C is done at your own risk.

3.2 Temperature curves

Standard test procedures use a gradual change in temperatures, allowing the device under test to adapt to the temperature without damage.

While the iQ-Climate Chamber can change the temperature at a rate of 5°C per minute, for most applications, the rate should be much lower (i.e., 1°C per minute).

Use the standards or norms applicable to your use case for reference.

3.3 Manual operation

You can control the iQ-Climate Chamber directly by using the touchpad.

The fastest way to change temperature is to use the manual mode.

Click the **Manual** button below the touchpad. Here you can set a target temperature and see the current temperature.

Once you set the target temperature, press **Start/Stop**. The iQ-Climate Chamber will reach the target temperature as quickly as possible.

Use this method only for room temperature differences of 50°C or less.

Higher temperature differences should be bridged slower, using a temperature curve.

To use or create a temperature curve/program, click on the **Prog** button below the touchpad.

For details on using the touchpad, please see the CTS-manual provided with the iQ-Climate Chamber.



3.4 Computer operation

The iQ-Climate Chamber can be controlled remotely using a Windows PC and the software CID-Pro 5.

This software is provided on the USB stick.

To connect to the iQ-Climate Chamber, you will need network access. It does not support DHCP and needs to be assigned a fixed IP-Address.

Please ask your IT-Department for assistance setting up the iQ-Climate Chamber within your network.

For details on configuring and using computer control, see the CID-Pro 5 manual provided with the iQ-Climate Chamber.

3.5 Hot air blower / Defrosting the window

The hot air blower lets the window stay free from ice and water condensation.

Please switch it on whenever you set the temperature near or beneath the freezing point of water.

The hot air blower has two modes of operation:

When the switch is set to **ON**, it will be permanently on.

When the switch is set to **PROGRAM**, it will be controlled by setting the **Digital output 1** in your programs.

So, when you write a complete test cycle, you can switch on the hot air blower for low temperatures while having it off during high-temperature parts of the cycle.

This setting can be switched by manually setting the **Digital output 1** on the touchpad.

When set to **OFF**, it will be permanently switched off.



4 ADDITIONAL INFORMATION

4.1 Detailed information in the CTS-manual

A detailed manual on the operation of the Chamber is provided by its manufacturer, CTS.

The English version of the manual is on the USB stick in the manual folder.

The CTS manual includes piping and wiring diagrams for service experts.



4.2 Disposal instructions

After the service life of iQ-Climate Chamber, it must be disposed of properly.

Observe your national regulations.

Contact Image Engineering if assistance for disposal is required.

5 TECHNICAL DATASHEET

The technical datasheet can be downloaded at the website of Image Engineering:

www.image-engineering.com.