



# CONTROLLED ROOM TEMPERATURE CABINETS

## USER MANUAL

CRT30, CRT60, CRT150, CRT300 & CRT400

## QED Scientific Controlled Room Temperature Cabinet

For the storage of products that are required to maintain a temperature of between +15 and + 25 °C  
Please note: Although it uses a compressor cooling system, this is not a refrigerator – do not store products that require refrigeration or freezing.

### Contents

|   |    |
|---|----|
| Important Safety Instructions .....           | 3  |
| Power supply:.....                            | 4  |
| External Alarm Contacts.....                  | 4  |
| Transport and Handling.....                   | 4  |
| Disposal: .....                               | 4  |
| Unpacking and Installation.....               | 5  |
| Start up.....                                 | 5  |
| Control.....                                  | 6  |
| High / Low Temperature Monitoring.....        | 6  |
| Resetting the Recorded High / Low Values..... | 6  |
| Set Temperature.....                          | 7  |
| Alarms.....                                   | 8  |
| Defrosting.....                               | 8  |
| Lock.....                                     | 9  |
| Light.....                                    | 9  |
| Loading.....                                  | 9  |
| Maintenance and cleaning.....                 | 10 |
| Troubleshooting.....                          | 11 |
| Alarm Codes.....                              | 11 |

## Important Safety Instructions

Read the instruction manual before using the cabinet.

It is the user's responsibility to operate the appliance in accordance with the instructions given.

Contact your dealer immediately in case of any malfunctions

The cabinet is for indoor use only.

Keep the cabinet away from heat sources and do not expose it to direct sunlight.

Refrigerant gas is R600a, which is environmentally friendly, but can be combustible.

Care must be taken when handling or transporting the appliance to prevent any damage to the refrigeration components or release of refrigerant gasses.

Do not install the cabinet near a ventilation or air conditioning system.

Using the cabinet in an ambient temperature that reaches extremes of cold (for example in goods bay where the temperature is largely affected by the outside) may affect the internal temperature regulation.

Place the cabinet in a dry and ventilated place.

This cabinet is not to be used to store volatile substances, or anæsthetic or other flammable gasses.

## Power supply:

The cabinet is designed for: 220 – 240 V, 50 Hz

The appliance must be correctly earthed.

The cabinet is fitted with a B.S. 1363 (UK) mains plug. A 13 amp fuse must be used.

The flexible cord fitted has three cores. The colours used are:

|               |         |
|---------------|---------|
| Green/Yellow: | Earth   |
| Blue:         | Neutral |
| Brown:        | Live    |

Do not use this appliance with multi-socket distribution / extension leads.

A complete disconnection from the mains is possible by removing the plug from the wall socket. When installing the cabinet, ensure that the socket is easily accessible.

Do not use the cabinet if the power supply cable becomes damaged.

There are no user serviceable parts inside. Any service / repair must be done only by competent persons, qualified to do the work.

## External Alarm Contacts

There are external, voltage free NO / NC contacts, (max 1 A 250 V) on the rear of the cabinet. In a normal state, the common (C) terminal has continuity to the Normally Closed (NC) terminal. In the event of an alarm, this becomes an open connection and continuity from common is transferred to the Normal Open (NO) terminal.

## Transport and Handling

This unit is heavy. Safe lifting must be observed – ensure there are enough people to move it safely. Do not tilt it backwards by more than 45 °.

## Disposal:

This appliance contains refrigerants as well as recyclable materials. Disposal of the cabinet must take place in an environmentally correct way. Please note existing regulation and safety advice on disposal of this or any other refrigeration equipment.

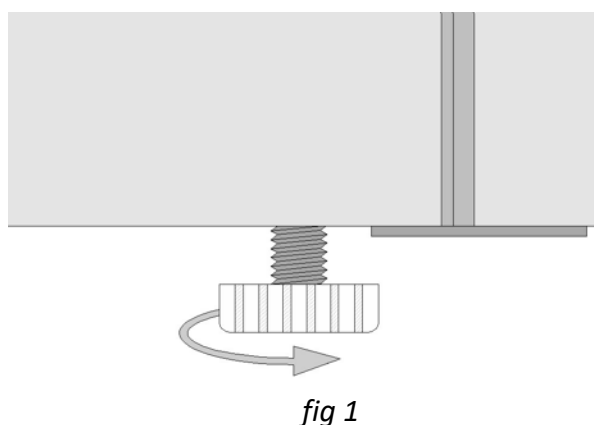


## Unpacking and Installation

Remove all packaging and check that there has been no transport damage.

Any transport damage, must be reported to the transport company and noted on the delivery note.

To ensure correct function it is important that the cabinet is installed on a stable, suitable surface (not carpet as this can prevent adequate ventilation) and is level. If required, it is possible to adjust the extension of the feet of the cabinet. See fig 1



The unit should be installed in a suitable space with at least:

- 30 cm clearance above the cabinet

- 5 cm clearance to either side (or at least 10 cm from sources of heat or condensation)

- 6 cm clearance at the rear.

There must be sufficient space at the hinge side to allow proper cleaning and removal / replacement of the shelves

Place the cabinet in a dry and ventilated place. Do not place it outside (for use or storage).

Keep the cabinet away from heat sources and do not expose it to direct sunlight.

Using the cabinet in an ambient temperature that reaches extremes of cold (for example in goods bay where the temperature is largely affected by the outside) may affect the internal temperature regulation.

## Start up

Before use, it is recommended that the cabinet is cleaned; see the section on maintenance and cleaning.

**Important:** Please wait at least 3 hours once the cabinet is level before starting it for the first time. This is to allow the refrigerant to settle following transport and is important to ensure proper operation

## Control

The digital controller is placed in the control panel, see fig 2.




fig 2

The controller is preset and in most cases it is not necessary to adjust the settings. Normally, the screen will show the current temperature within the cabinet.


### High / Low Temperature Monitoring

The controller records the highest and lowest air temperatures monitored.

To view the stored values, press .

The display will flash **HI** followed by the highest recorded temperature and then **LO** followed by the lowest recorded temperature.



### Resetting the Recorded High / Low Values

Press and hold  until the screen shows **HL**.

The recorded high and low temperatures are now reset.

## Set Temperature

The cabinet is preset to control with the official Controlled Room Temperature range (+15°C – +25°C). As control is based on measured temperature, rather than heating / cooling power, in normal circumstances it will not be necessary to change the set point (control temperature) of the controller.

To change the set point, if desired, from the main screen press . The screen will show the current set point. Use the arrows to adjust it and press  again to confirm.

If the monitored temperature is regularly causing high or low alarms, please call your supplier for technical assistance.


Please note that the ambient temperature around the cabinet will affect the rate of change of the internal temperature and extremes may lead to high or low alarm states.

Regular calibration and servicing is recommended to ensure continued correct operation and so as to avoid reducing the life of the cabinet.

## Alarms

The controller is preset with an alarm that will sound, should the monitored temperature go outside of range for more than 10 minutes.

In the case of an alarm, the screen will show an alarm code (see page 11 for details) and the current temperature.



To silence the sounder, press . If the alarm condition continues for some time, the sounder will resume (it can be silenced again if required)

There are voltage free, normally closed contacts on the rear of the unit, which can be connected to an external alarm system if required. These will activate (become open) whenever the unit is in an alarm state. To attach these to an external system, contact your alarms systems administrator.

## Defrosting

Due to the temperature range of the cabinet, regular frosting of the evaporator plate should not be an issue, however it is possible to perform a defrost cycle.

Should you need to force a defrost:

Empty the cabinet into other suitable storage. Press and hold  and  for 6 seconds until the controller beeps. The defrost will take approximately 25 minutes.

It can be cancelled, by holding  and  again for 6 seconds, when the controller will beep.

Never use any active or mechanical assistance (such as a heater or chisel) to defrost the cabinet.

Ensure that the condensate drain (at the bottom of the rear wall, underneath the cooling plate) is clear at all times.



## **Lock**

For security, the cabinet is fitted with a key lock (in the control panel). Please keep the key(s) safe and keep a record of any key numbers so that replacements can be issued if required.

## **Light**

If your cabinet is fitted with a light, it can be turned on and off with the switch in the control panel. Please note this is LED technology, which means that it is both more environmentally friendly and longer lasting than alternatives. It should not ever need replacing, but if it

## **Loading**

It is important that air flow is maintained for proper temperature control.

Do not overfill the shelves or obstruct the circulation fan as this is inefficient to run (which is both environmentally unfriendly and more costly). It can also cause uneven temperatures around the chamber – some items may become warmer or cooler than others or than required.

Do not allow any items to come into contact with the evaporator plate, which is fixed to the back wall of the chamber.

This is a Controlled Room Temperature cabinet that operates between +15°C and +25°C. Do not store items inside that are for refrigeration or freezing.

## Maintenance and cleaning

Regular temperature calibration and servicing is recommended to ensure continued correct operation and so as to avoid reducing the life of the cabinet.

The cooling system is hermetically sealed and does not require supervision, only cleaning. If it becomes damaged and the cabinet fails to cool, please call your supplier for technical assistance\*.

Disconnect from the mains power supply before cleaning.

Use only a light soap solution to clean the internal and external surfaces of the cabinet. Do not use any abrasives or cleaning product containing chlorine or other harsh chemicals as they can damage the surfaces and the cooling system.

Ensure that the condensate drain (at the bottom of the rear wall, underneath the cooling plate) is clear at all times.

Clean the condenser and the compressor compartment with a vacuum cleaner and a stiff brush to avoid dust build up which can impair the cooling system and affect the energy consumption and life of the cabinet.

**Important:** Do not use water or any cleaning products or solutions to clean the compressor compartment as this can cause short circuits in the electrical parts of the system which could be a dangerous as well as damage the cabinet.

---

\* Any repairs to the cooling system must be performed by a fully qualified refrigeration engineer

## Troubleshooting

If the temperature of the cabinet regularly, or persistently reaches out of range (+15°C to +25°C), check the environment in which it is installed. Extremes of ambient temperature may affect the rate of change of the internal temperature and extremes may lead to high or low alarm states.

If the environment is suitable or hasn't changed since before the problem, make a note of the details (chamber temperature, high and low temperatures, ambient temperature, any alarms etc) and call your supplier for technical assistance.

If the cooling system becomes damaged and the cabinet fails to cool, disconnect the appliance from the power supply and call your supplier for technical assistance. All work on, or repairs to the cooling system must be performed by a competent, fully qualified refrigeration engineer.

## Alarm Codes

|     |   |
|-----|---|
| HP1 | Air temperature is too high               |
| HP2 | Simulated product temperature is too high |
| LP1 | Air temperature is too low                |
| LP2 | Simulated product temperature is too low  |
| do  | Door is ajar                              |
| SC1 | Probe 1 short circuit                     |
| SO1 | Probe 1 open circuit                      |
| SC2 | Probe 2 short circuit                     |
| SO2 | Probe 2 open circuit                      |

