

By VELP Scientifica

## *Instruction Manual*

**CG-1997-V-610**

**CG-1997-V-610E**

**AREX 5 Advance Heating Magnetic Stirrer**

### General Information / Informations Générales



Before using the unit, please read the following instruction manual carefully.  
Avant d'utiliser l'instrument, il est recommandé de lire attentivement le présent manuel d'instructions.



Caution, hot surface!  
Attention, surface chaude!



Do not dispose of this equipment as urban waste, in accordance with EEC directive 2012/19/UE.  
Ne pas recycler l'appareil comme déchet solide urbain, conformément à la Directive 2012/19/UE.



The product can be used with flammable liquids.  
Le produit peut être utilisé avec des liquides inflammables.

### **This unit must be used for indoor laboratory applications only.**

The manufacturer declines all responsibility for any use of the unit that does not comply with these instructions. If the product is used in a way not specified by the manufacturer or with unspecified accessories, the product's safety may be compromised.

### **Cet instrument ne peut être utilisé pour les applications de laboratoire à l'intérieur seulement.**

Le fabricant décline toute responsabilité en cas d'utilisation non conforme aux instructions concernant ces instruments. Si le produit est utilisé d'une manière non spécifiée par le fabricant ou accessoires non spécifiés, la sécurité du produit peut être compromise.

### **This unit has been designed and manufactured in compliance with the following standards:**

#### **L'instrument a été conçu et fabriqué conformément aux normes suivantes:**

Safety requirements for electrical equipment for measurement, control and for laboratory use  
Règles de sécurité pour appareils électriques de mesure, de régulation et de laboratoire

**IEC/EN 61010-1**  
**IEC/EN 61010-2-051**  
**IEC/EN 61010-2-010**

Electrical equipment for laboratory use

**UL 61010-1**

General requirement - Canadian electrical code

**CAN/CSA-C22.2 No.61010-1**

VELP reserves the right to modify the characteristics of its products with the aim to constantly improve their quality.

Dans le but d'améliorer constamment la qualité de ses produits, VELP se réserve le droit d'apporter des modifications aux caractéristiques de ceux-ci.

## Safety Regulations / Consignes de Sécurité

The plug disconnects the instrument. Therefore, place the instrument where it can be quickly disconnected.

Le bouchon est le moyen de déconnexion de l'appareil. Par conséquent, placer l'appareil où il peut être rapidement débranché.

Use only the power cable provided with the instrument.

Utilisez uniquement le câble d'alimentation fournis avec l'instrument.

Hotplate temperature: up to 310 °C.

Température de la plaque chauffante: jusqu'à 310 °C.

The heated solution may release toxic, dangerous or poisonous gases. Adequate safety measures must be taken, in accordance with the safety regulations in force, including the placement in a hood and personal protective equipment (masks, gloves, goggles, etc.).

La solution chauffée peut libérer gaz toxiques ou dangereux. Des mesures de sécurité adéquates doivent être prises, en conformité avec les règlements de sécurité en vigueur, compris la présence de la hotte de laboratoire et équipements de protection individuelle (masques, gants, lunettes, etc.).

The vessel must be made of a suitable material to withstand the foreseen temperature.

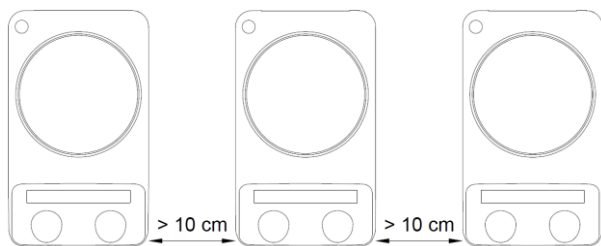
Le contenant du produit en cours de traitement doit être compatible avec la température utilisée.

The magnetic field doesn't interfere with the function of cardiac pacemakers or data media if they are farther than 20 cm to the instrument.

Le champ magnétique n'affecte pas les stimulateurs cardiaques ou les dispositifs de support de données s'ils sont placés à plus de 20 cm de la plaque chauffante.

Position the instrument on a flat surface, with a distance from the wall of 30 cm (at least) and between instruments of 10 cm (at least).

Placez l'instrument sur des surfaces planes, à au moins 30 cm des murs et à au moins 10 cm entre les instruments.



Do not use with explosive or dangerous materials for which the equipment is not designed. The stirrer must not be used in explosive atmospheres, in bain-marie, or to stir combustible liquids that have a low combustion temperature. The product is intended for use with very small quantities of flammable liquids, or flammable liquids that have a fire point higher than 625 °C and a flash point higher than 600 °C.

Ne pas utiliser avec des matières explosives et dangereuses pour lesquelles l'équipement n'est pas conçu. L'agitateur ne peut pas être utilisé dans des atmosphères explosives, dans un bain d'eau et pour remuer les combustibles liquides avec la température de combustion bas. Le produit est destiné à être utilisé avec de très petites quantités de liquides inflammables ou de liquides inflammables ayant un point d'incendie supérieur à 625 °C et un point d'éclair supérieur à 600 °C.


It is responsibility of the user to appropriately decontaminate the instrument in the case that dangerous substances fall on or in it, according to the safety datasheet of substances used and to the current laboratories' safety standards. It is not possible to decontaminate the product under steam.

It is also responsibility of the user to use substances for cleaning or decontaminating which do not react with internal parts of the instrument or with the material contained in it. In case of doubts about the compatibility of a cleaning solution, contact the manufacturer or local distributor.

Est responsabilité de l'utilisateur la décontamination en cas de déversement de matières dangereuses sur ou à l'intérieur de l'équipement conformément à la fiche de données de sécurité des substances utilisées et aux normes de sécurité actuelles des laboratoires. Il n'est pas possible de décontaminer le produit sous la vapeur.

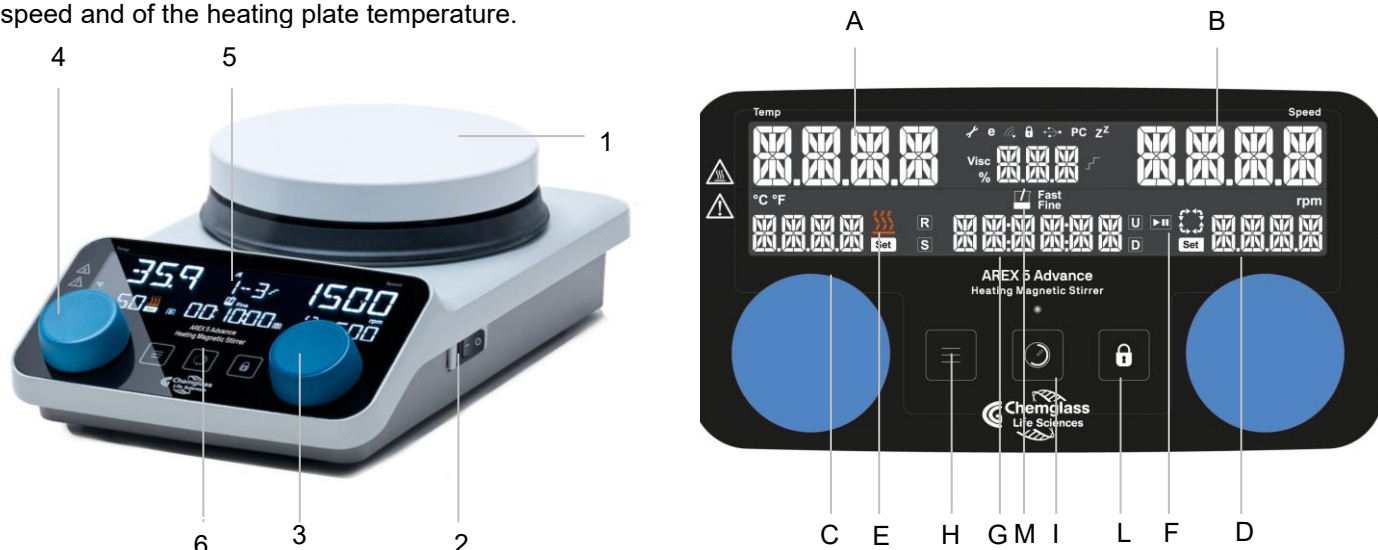
Est responsabilité de l'utilisateur à utiliser des substances qui ne produisent pas de danger pour le nettoyage ou de décontamination, qui ne réagissent pas avec les parties internes de l'appareil ou avec la matière qu'il contient. En cas de doute sur la compatibilité d'une solution de nettoyage, contactez le fabricant ou le distributeur local.

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The Advance heating magnetic stirrers are used to heat and mix liquids inside a suitable container, placed on the heating plate. The stirring is possible thanks to a magnetic drive stir bar placed into the vessel.

The instrument is used in the laboratory for general use and for all those applications that require precise regulation of the stirring speed and of the heating plate temperature.



- 1 Heating plate
- 2 Main switch
- 3 Speed control knob
- 4 Temperature control knob
- 5 Display
- 6 Standby LED

- A Current temperature
- B Current speed
- C Set temperature
- D Set speed
- E Heating active icon
- F Stirrer active / rotation direction icon
- G Timer
- H Menu button
- I Timer button
- L Lock button
- M Probe connected icon

On AREX 5 Advance, the aluminum alloy heating plate with ceramic coating (1) ensures:

- Optimum heat distribution and a high specific power thanks to the circular configuration;
- Temperature homogeneity;
- High resistance to thermal stress and thermal shock;
- High resistance to chemical agents and surface abrasion.

**Note:** Using the heating plate at high temperatures may cause discoloring. This does not alter the thermal, mechanical and chemical resistance of the plate in any way.

The powerful brushless motor is able to stir from 30 up to 1700 rpm.  
SpeedServo technology maintains constant speed as viscosity changes.

**Note:** It is important to choose the most suitable magnetic stirring bar related to the type and the quantity of the liquid to be stirred as well as to the type of the beaker. Size and shape of the magnetic stir bar determines the stirring efficiency at any given speed. The stirring bar which satisfies most applications is Ø8 x 40 mm.

The Advance models can work in combination with the Pt100 or Pt1000 external probe or with the VTF thermoregulator for precise and accurate control of the sample temperature.

## 2. Installation

- Unpacking
  - Check the integrity of the unit after unpacking.
- The box includes
  - Heating magnetic stirrer;
  - Instruction manual;
  - Power cable;
- Installation
  - Place the unit on a non-flammable surface;
  - Make sure that the technical specification of the unit and of the power supply line are the same;
  - Make sure that the electrical network is grounded;
  - Make sure that the main switch is on position "0" (OFF);
  - Connect the instrument to an easily accessible socket (compliant with the current safety norms), using only the provided power cable. The standby LED will illuminate.

**Note:** Keep the power cable far away from the hot plate.

- Place the container with the liquid and the stir bar on the stirring plate.

## 3. Operation

### Power-up

- Turn the unit on using the main switch (2);
- The display shows the software version and the last settings.

**Note:** If the set starting mode is STOP (see chap. 8), the heating and the stirring functions are not active and their icons are switched off. Otherwise, the unit starts working at the last set temperature and speed setpoints.

### Stirring

- Rotate the right knob (3) to set the stirring speed;
- Push the knob in to start stirring (stirrer active icon turns on);
- The real speed increases until set point achievement;
- A microprocessor ensures constant speed even if the viscosity changes (SpeedServo);
- Push the knob (3) to stop stirring.

### Heating

- Rotate the left knob (4) to set the heating plate temperature;
- Push the knob in to start heating (heating active icon light on);
- Push the knob (4) to stop heating.

**Note:** If the main switch is off and the temperature of the hotplate is above 50 °C, the display shows the current heating plate temperature and a flashing HOT icon. This warning is not active if the instrument is not powered. If HOT ALWAYS is selected (see chap. 8) it's possible to show the flashing HOT icon when the display is on and the heating function is active.

### Operation with external probe

- Turn off the instrument using the main switch (2);
- Screw the threaded support rod into its seat on the back of the instrument (optional);
- Fasten the clamp onto the support rod (optional);
- Place the external temperature probe into the clamp (optional); then place it into the sample contained inside the flask;
- Plug the probe into the dedicated socket on the back of the instrument. The heating magnetic stirrer automatically recognizes the type of temperature probe (Pt100 or Pt1000);
- Turn the unit on using the main switch. When the external probe is connected correctly, the Probe icon (M) is on, showing the thermoregulation mode selected;
- Turn the left knob to set the working temperature;
- Push the left knob in to start heating. The current temperature indicator (A) of the heating magnetic stirrer shows the temperature read by the probe.

## Operation with thermoregulator VTF

- Turn off the instrument using the main switch (2);
- Screw the threaded support rod into its seat on the back of the instrument and fasten the VTF thermoregulator onto the support rod. Place the temperature probe in the flask making sure that it is completely immersed in the sample;
- Plug the VTF into the dedicated socket on the back of the instrument;
- Turn the unit on using the main switch. When the VTF is correctly connected, the Probe icon (M) is illuminated. The working temperature is shown on the display of the VTF. The current temperature indicator (A) of the heating magnetic stirrer shows ----;
- Select the temperature set point on the VTF;
- Push the left knob in to start heating.

**Note:** With external probe and VTF, the heating magnetic stirrer always has primary control of the heating plate temperature. The temperature control feature of the heating plate can also be used as a safety thermostat. In this case, the maximum temperature of the heating plate will not exceed the temperature setting on the magnetic stirrer (see option TEMP LIMT chap. 8), meaning that a longer heating time is required in order to reach the temperature setting, thus reducing temperature oscillation at a setpoint value.

## 4. Export data

On the back of the instrument, there is a USB type C port for recording the device's process data on a USB stick. The data recording starts as soon as a compatible USB stick (FAT32 file system) is inserted in the port and the USB icon appears on display.

The motherboard has no storage memory. The volume of data that can be recorded varies depending on the remaining storage capacity of the connected USB stick. The sampling time can be set by the user in a specific menu (Chapter 6). When the USB stick is used for the first time, a "log" folder is created. The csv files will be saved inside it with the following name: SNXXXXXX\_DDMMYY\_HHMMSS.csv where DDMMYY and HHMMSS is the date and hour when the USB stick has been inserted. For this reason, it's suggested to set the current date and hour in the submenu (see chap. 8). Csv format can be imported into Excel to create graphs and advanced data processing. It's suggested to protect the USB port using the dedicated cap when not in use to protect it from possible chemical agents attack.

### **Note:**

USB sticks that are not formatted to FAT32 are not recognized by the instrument.

USB sticks with memory over 32GB may not be compatible to FAT32.

## 5. Connection to PC

The instrument can be connected to a PC, using a suitable cable for data transferring, to achieve efficient and intuitive data logging and control of the working parameters (temperature and speed) through a dedicated software, called ControllerSoft. Select PC as external device in the EXT DEV submenu (see chap 8) and follow the instruction manual of the software.


## 6. VELP Ermes Configuration

VELP Ermes is a revolutionary cloud platform that transforms and improves your laboratory experience. VELP Ermes creates a connected ecosystem of devices, people and data that transmit information between each other cutting down distances and expanding your scientific potential. VELP Ermes collects and stores your data with the maximum level of encryption following the highest cyber-security standards.

Refer to the "How to Connect to VELP Ermes Platform" guide to connect your product.


**NOTE:** the instrument can be connected only to a 2.4 GHz Wi-Fi network.

## 7. Timer / Counter functionality

Hold the Timer button (I) to show 00:00:00 of CountUp function with  icon.

### **CountUp:**

- Press the Timer button to start counting, regardless of whether stirring and heating are on;
- When CountUp has started, press the Timer button once to pause it;
- To reset it, push twice quickly on Timer button;
- After reaching 99:59:59, CountUp restarts from 00:00:00;
- To hide the CountUp, hold the Timer button for 2 seconds.

With CountUp visible, press the central Timer button or the right knob for 2 seconds, to show the CountDown function with  icon.

#### CountDown:

- To set/change hours, minutes and seconds, turn the right knob during the flashing of value;
- To confirm the value, press the right knob;
- The CountDown starts when a function between stirring and heating is active if TIME STRT = SNAP (see chap. 8) or when the temperature reaches the set point if TIME STRT = SETP.
- When CountDown has started, press the Timer button once to pause or restart it;
- To reset it, push twice quickly on Timer button;
- To hide the CountDown, hold the Timer button for 2 seconds when it is in pause or in set/change.

When the CountDown expires:

- The buzzer beeps and the display shows END;
- Heating is stopped if TIME HEAT = OFF; otherwise, it continues;
- Stirring is stopped if TIME SPED = OFF; otherwise, it continues;
- Depending on the settings of TIME SPED and TIME HEAT, the display shows END.

With END, after pressing the Timer button, the Timer/Counter shows the last setting.

## 8. Setting mode

Pressing the Menu button (H) when heating and stirring are not active, to show and set the main functions of the Main Menu.

Hold the Menu button (H) for 2 seconds when heating and stirring are not active, to show the other functions and settings.

Turn the left knob to browse through the available menus, listed below.

Press and turn the right knob to modify the value of the parameter (except for motor and heating element counters).

Press the knob to confirm.

To exit the setting mode, press the Menu button (H) or do not press/turn the knobs for 10 seconds.

#### Main menu:

Parameter shown		Default value	Range	Description
Display 1	Display 2			
INT	MODE	ON TIME HH:MM:SS  OFF TIME HH:MM:SS	HH:MM:SS – 00:00:05 ÷ 99:59:59  00:00:05 ÷ 99:59:59	<u>Intermitted mode</u> It allows to cyclically stop the stirrer using the direction of rotation set with ROT DIR, if ON TIME ≥ 00:00:05 and OFF TIME ≥ 00:00:05. With ON TIME = HH:MM:SS intermitted mode is disabled.
AUTO	REV	REV TIME HH:MM:SS	HH:MM:SS – 00:00:05 ÷ 99:59:59	<u>Autoreverse function</u> It allows to reverse the direction of rotation of the stirrer if On TIME ≥ 00:05. With REV TIME = HH:MM:SS autoreverse is disabled.
ACT	VISC	OFF	ON – OFF	<u>Viscosity function</u> It allows to enable/disabling the viscosity variation indicator. A few seconds after reaching the speed set point, this value settles around 100% and then change proportionally to the viscosity of the liquid respect to starting point. The value can be reset at any time by pressing the Menu button for 2 seconds. With VISC = ON , Ramp modality is OFF.
SET	RAMP	OFF	ON – OFF	<u>Ramp modality</u> It allows to set up to 9 temperatures, 9 speeds that will be performed in sequence for the time set for each ramp. The first value to set is the number of ramps and then, pressing and turn the right knob, it's possible set for each ramp, the temperature, time and speed. Pressing the left knob it's possible to modify the previous parameter. If RAMP = ON, choose the best TIME STRT parameter for the analysis. To skip the current ramp, press the right or the left knob to activate SKIP mode, which allows to run the next ramp or end the program. With RAMP = ON, Viscosity function is OFF.

Submenu:

Parameter shown		Default value	Range	Description
Display 1	Display 2			
TEMP	LIMIT	310	OFF - 50 - 310 10 °C steps	<u>Heating plate temperature limit</u> It limits the maximum value of the temperature set point for the heating plate. ➤ If OFF is selected, the heating function is "disabled".
SPED	LIMIT	1700	100 – 1700 step 100rpm	<u>Speed limit</u> It limits the maximum value of speed set point for the motor.
STRT	MODE	STOP	STOP - RUN	<u>Starting mode</u> ➤ STOP: when the instrument is powered, the heating and the stirring functions are not active. ➤ RUN: when the instrument is powered, it starts working at the last working conditions.
CTRL	TYPE	FINE	FINE - FAST	<u>Thermoregulation mode with external probe</u> ➤ FINE: optimized temperature control for minimized overshoot and oscillations, slow rise in temperature. ➤ FAST: fast rise in temperature, increased overshoot and oscillations.
PROB	AL6	07:00	00:00 00:30 ÷ 30:00	<u>External probe safety alarm</u> It allows to modify the time to shows the AL 6 error message (see chap. 9) or to disabling. With PROB AL6 = 00:00 the alarm is disabled.
PROB	AL7	ON	ON - OFF	<u>External probe safety alarm</u> It allows enabling/disabling AL 7 error message (see chap. 9).
PROB	CAL	0.0 °C	-10 ÷ 10 °C Step da 0,1 °C	<u>Probe calibration</u> It allows to align the external temperature probe reading to a reference thermometer.
ROT	DIR	CC	CC - C	<u>Stirring direction:</u> ➤ CC: stirring direction is counter-clockwise; ➤ C: stirring direction is clockwise.
TIME	STRT	SNAP	SNAP - SETP	<u>Set start timer countdown</u> ➤ SNAP: timer countdown starts as soon as one main function (Temperature/Speed) is on; ➤ SETP: timer countdown starts when temperature set point is reached.
TIME END	HEAT	OFF	ON - OFF	<u>Continue heating after time end</u> If ON, heating continues after timer end.
TIME END	SPED	ON	ON - OFF	<u>Continue stirring after timer end</u> If ON, stirring continues after timer end.
SAMP	TIME	00:00:10	00:00:01 ÷ 01:00:00	<u>Sampling time selection</u> It allows to change the sampling time for writing to a USB stick.
SET	DECP	C	C-P	<u>Choice of decimal separator for writing to a USB stick:</u> ➤ C: For date and time it considers the format DD/MM/YYYYY and HH:MM:SS and as decimal separator it uses the comma; ➤ P: For date and time consider the format MM/DD/YYYYY and HH:MM:SS PM/AM and as decimal separator consider the point.
SET	HOURL	Current	00:00:01 ÷ 23:59:59	<u>Setting hour</u> It allows to modify hour into log file to a USB stick.
SET	DATE	Current	... ÷ 31.12.99	<u>Setting date</u> It allows to modify date into log file to a USB stick.
AMB	CAL	0.0 °C	-10 ÷ 10 °C 0,1 °C steps	<u>Heating plate probe calibration</u> It allows to align the heating plate probe reading to a reference thermometer.
COUN	MOTO	---		<u>Motor and heating element operating time</u> It shows motor and heating element operating times. Operating times are shown in hours up to 9999 hours (around 416 days). Then they are shown in days.
COUN	HEAT			
HOT	ALWAYS	OFF	ON-OFF	<u>HOT message option</u> ➤ If OFF, HOT appears only when the main switch is in 0 position and if the current temperature of heating element is over than 50 °C; If ON, HOT appears even if the main switch is in I position and if the current temperature of heating element is over than 50 °C.



RSET		NO	YES - NO	<u>Reset</u> It allows to restore all system settings to their default values.
EXT	DEV	USB	USB - PC	<u>External devices</u> It allows to select the desired external device configuration: USB: data export to a USB stick PC: data logging and control of the working parameters through the dedicated software, ControllerSoft.
WIFI		OFF	ON-OFF	<u>Wi-Fi</u> Activate/Deactivate Wi-Fi connection.
OTC		----		<u>One time code</u> Select this menu when you need to register the instrument using ERMES, in order to receive the unique security code.
STRT	AP	OFF	ON-OFF	<u>Access point</u> Select this menu if you need to change the connection parameters to your WiFi network (chapter 66).

## 9. Error and warning messages

When the display shows an error message, the instrument functions automatically stop.

<b>AL1</b>	Heating plate overtemperature (T > 330 °C)	T > 330 °C
<b>AL2</b>	Excessive heating time	
<b>AL3</b>	The stirring system doesn't run correctly	
<b>AL4</b>	External probe overtemperature	Only if the external probe is connected
<b>AL5</b>	Heating plate safety probe overtemperature (T > 370 °C)	
<b>AL6</b>	Slow increase in temperature read by the external probe	Only if the external probe is connected and the time set for this alarm is over than 00:30
<b>AL7</b>	Fast decrease in temperature read by the external probe	Only if the external probe is connected and PROB AL7 is ON

To remove the error message, restart the instrument from the main switch. For AL5 it is necessary to disconnect the instrument from the power supply.

If an error message appears on the display, please contact authorized personnel.

## 10. Maintenance

No routine or extraordinary maintenance is required except periodic cleaning.

### Cleaning

Disconnect the unit from the power supply and use a cloth dampened with a non-flammable non-aggressive detergent.

### Repair

Repairs must be carried out by authorized Velp personnel only.

The transport of the instrument by freight forwarders, couriers or others must be carried out using the original shockproof packaging. Follow any instructions on the original packaging (e.g., palletizing).

It is the responsibility of the user to properly decontaminate the unit in case of hazardous substances remaining on the surface or interior of the device. If in doubt about the compatibility of a cleaning or decontamination product, contact the manufacturer or distributor.

## 11. Technical data

		AREX 5 Advance	
<b>General features</b>	Model	CG-1997-V-610E	CG-1997-V-610
	Voltage	230 V 50/60 Hz	115 V 60 Hz
	Power input	630 W	
	Current consumption	2,8 A	5,5 A
	Dimensions (WxHxD)	160x85x270 mm (6,3x3,3x10,6 in)	
	Weight	1,9 kg (4,1 lb)	
	Construction material	Aluminium body – Technopolymer enclosure – Tempered glass control panel	
	Working in continuous	Admitted	
	Maximum load on the plate	25 kg	
	Noisiness	<< 80 dBa	
	Environmental temperature admitted	+5...+40 °C	
	Storage temperature admitted	-10...+60 °C	
	Level of electrical protection CEI EN60529	IP 42	
	Max humidity	80%	
	Overvoltage category	II	
	Pollution degree CEI EN61010-1	2	
<b>Heating</b>	Max altitude	2000 m	
	Heating plate power output	600 W	
	Heating plate dimensions	Ø 135 mm	
	Temperature range	0 ÷ 310 °C (1 °C step)	
	Temperature resolution	1 °C	
	Heating plate construction material	CerAlTop™	
	Safety circuit	Separated with dedicated probe	
	Hot plate alarm	Over 50°C	
<b>External probe</b>	Overtemperature alarm	Over 330°C	
	Type	Pt100 – Ø 3mm Or Pt1000 – Ø 3mm (optional)	
	Temperature range	0 ÷ 310 °C (step da 1 °C)	
	Temperature resolution	0,1 °C	
	Accuracy	± 1 °C *	
<b>VTF</b>	Electrical data	3.3 VDC – 1 W (max)	
	Temperature range	-10 ÷ 300 °C (1 °C step)	
	Temperature resolution	0,2 °C	
	Accuracy	+/-0,5°C*	
<b>Stir</b>	Electrical data	12Vdc – 1.2W (max)	
	Stirring capacity	20 l H <sub>2</sub> O	
	Speed range	30 ÷ 1700 rpm (5 rpm step)	
	Speed resolution	1 rpm	
	Motor type	BLDC	
	Autoreverse / intermittent mode	5 s ÷ 99 h 59 min 59 s (1 s steps)	
<b>Timer</b>	Motor rating output	10 W	
	Countdown range	1 s ÷ 99 h 59 min 59 s (1 s steps)	
<b>Counters</b>	Motor	Operating hours/days	
	Heating plate		

\* in the following conditions: 800 ml of water in 1 liter glass beaker (diameter 105 mm), stirring bar 8 x 40 mm, 600 rpm, 50°C.

## 12. Accessories / Accessoires

Please get in contact with Chemglass Life Sciences for more details about accessories.

[www.cglifesciences.com](http://www.cglifesciences.com)

Phone: 1-800-843-1794

## 13. Warranty

The unit is guaranteed against production defects for 25 months from our invoice date.

In accordance with this guarantee Chemglass Life Sciences undertakes to repair any units resulting as faulty due to the quality of the materials used or poor workmanship.

Units rendered faulty due to inexpert handling/use or carelessness will not be replaced or repaired under warranty.

### Exclusions:

The guarantee will be considered null and void for faults resulting from:

- inexperience and carelessness of the operator
- repairs, maintenance or replacement of parts carried out by personnel or Companies not authorized by the manufacturer
- use of the instrument that does not comply to the instructions/recommendations given in the present operating manual
- use of non-original spare parts.

## 14. Declaration of conformity / Déclaration de conformité

We, the manufacturer VELP Scientifica, under our responsibility declare that the product is manufactured in conformity with the following standards:

Nous, VELP Scientifica, déclarons sous notre responsabilité que le produit est conforme aux normes suivantes:

EN 61010-1	Safety requirements for electrical equipment for measurement, control, and laboratory use Part 1: General requirements
EN 61010-2-010	Particular requirements for laboratory equipment for the heating of material
EN 61010-2-051	Particular requirements for laboratory equipment for mixing and stirring
ETSI EN 301 489-1 V2.2.3	Electromagnetic compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements
ETSI EN 301 489-17 V3.3.1	Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for Broadband Data Transmission Systems
EN 61326-1	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements

and satisfies the essential requirements of the following directives:

et qu'il satisfait les exigences essentielles des directives:

2006/42/EC	Machinery directive
2014/30/EU	Electromagnetic compatibility directive
2015/863/EU (RoHS III)	Restriction of the use of certain hazardous substances
2012/19/EU (WEEE)	Waste of electric and electronic equipment

plus modifications / plus modifications

