

SPECTRA

CF-100

PORCELAIN FURNACE

PRODUCT CATALOGUE & USER GUIDE



PRECISION VACUUM FIRING

EDITION 2026 · ENGLISH · REV. 2.0

SPECTRA

CF-100

Precision vacuum firing for modern dental laboratories.



1150°C

MAX TEMPERATURE

VMAX = 97%

FINAL VACUUM

200

EDITABLE PROGRAMS

DESIGN LANGUAGE

A compact porcelain furnace with two-stage firing, vacuum control set according to the local atmospheric pressure, a preheat function, a night program and a clear touch interface. 20 program groups of 10 programs each give 200 editable firing programs, with a rated maximum working temperature of 1150°C.



SAFETY & INSTALLATION

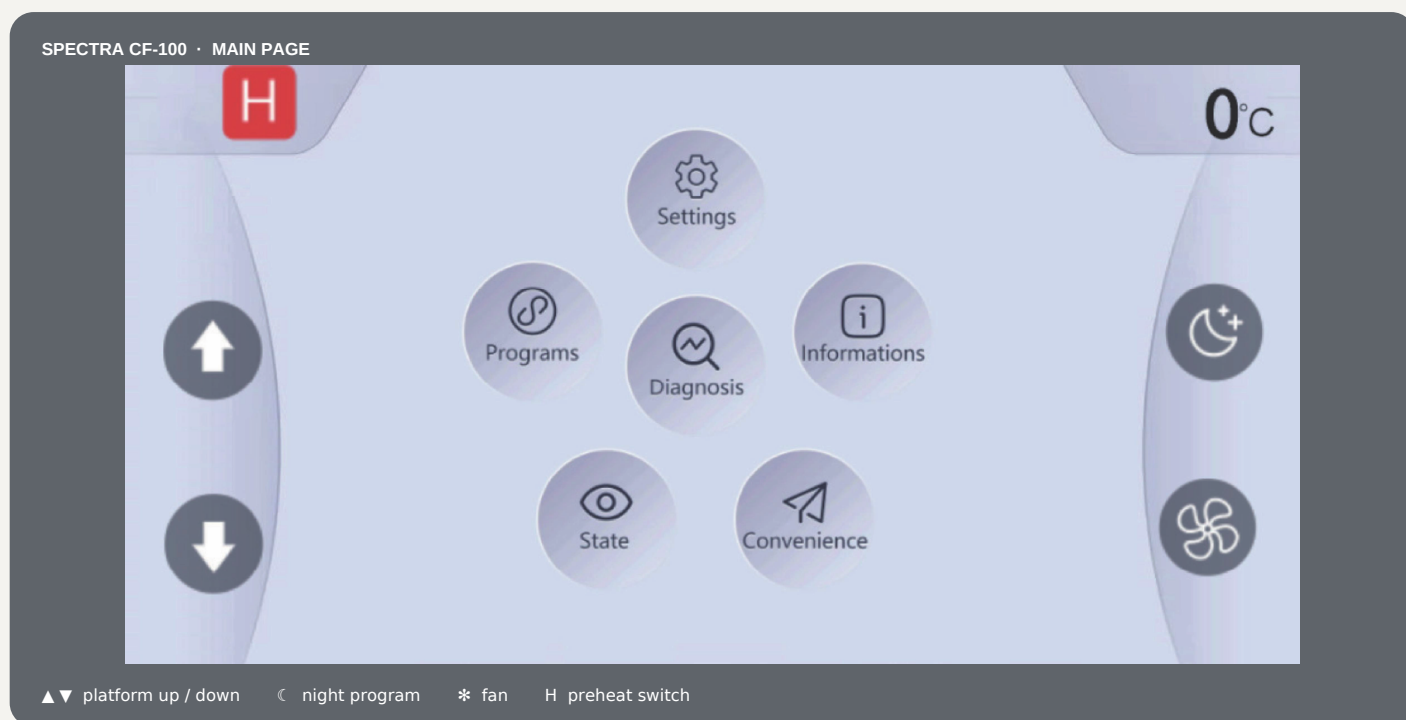
Read before installing or operating the furnace.

- 1 Read this manual and the precautions carefully before using the furnace. Keep the manual near the furnace so it can be checked at any time.
- 2 Keep the furnace away from children. Do not let children play with the furnace, the spare parts or the cables.
- 3 Pay attention to the working environment. Use the furnace with good ventilation and lighting. Do not work in a humid environment.
- 4 No liquid is allowed to enter the furnace body.
- 5 When the furnace is running, the top of the cover is at a high temperature: do not touch it. Keep other instruments and equipment that are sensitive to high temperature away from the furnace.
- 6 Nothing may be placed on top of the device.
- 7 Always pay attention to the operation of the device and never operate it with an error. Regular maintenance is required.
 - All components in the device must be installed correctly; only under suitable conditions can the furnace work normally and trouble-free.
 - Before using the furnace, carefully check whether the protection functions operate normally.
 - If the furnace or its spare parts are damaged, contact SPECTRA CERAM technical support for repair or replacement before use.
- 8 Do not use the cable to drag the device. Keep cables away from heat sources, oil, dirt and sharp objects to avoid damaging them.
- 9 The power must be off when cleaning and maintaining the device.
- 10 For your safety, use the spare parts correctly.

BEFORE FIRST USE

Read the complete manual, check that all components are correctly installed and that the protection functions work normally. Operate the furnace only in a well-ventilated, well-lit and dry environment.

CONTROL INTERFACE



POWER-ON SELF TEST

After the power-on self test (POST) the system enters the main page.

PREHEAT CONTROL

The H button in the upper-left corner is the preheat switch. Flashing red: preheating is ON and will shut down automatically after one hour. Grey: preheating OFF. Power-on preheating is OFF by default; it can be turned on or off manually.

MAIN FUNCTIONS

01 SETTINGS

Brightness, sound, language, date & time, Advanced, Engineer mode.

02 PROGRAMS

20 program groups × 10 heating programs.

03 INFORMATION

ID, production date, run hours, password, version, error log.

04 DIAGNOSIS

Vacuum system autotest and manual pump test.

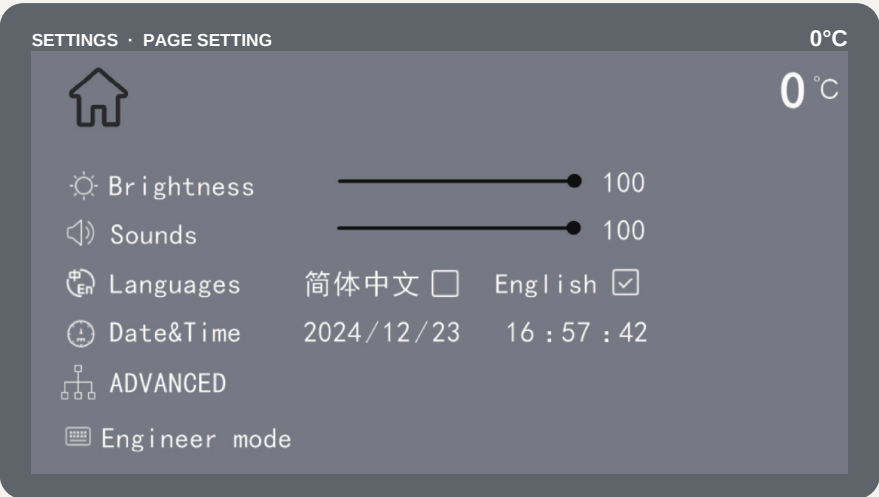
05 STATE

Real-time room temperature, humidity and voltage.

06 CONVENIENCE

Quick page: dehumidity, cleaning, temperature calibration.

SYSTEM SETTINGS



400°C

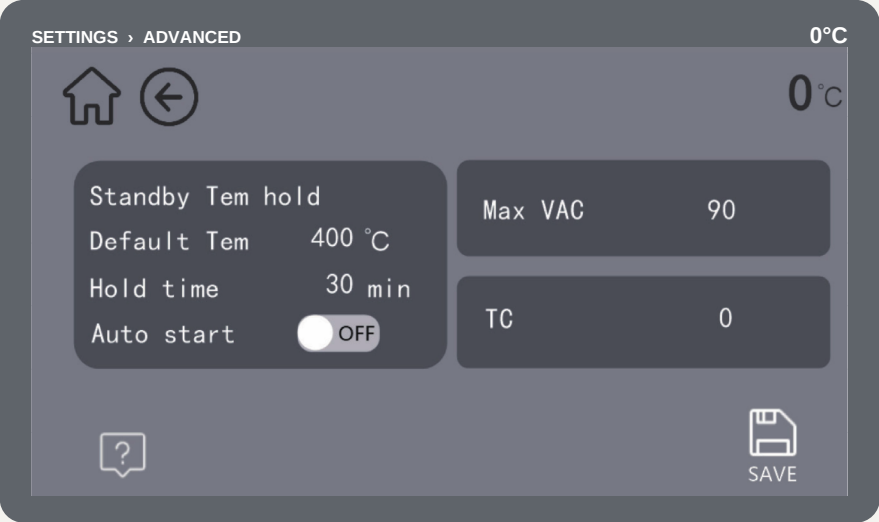
STANDBY TEMPERATURE

30 min

STANDBY HOLD TIME

简体中文 / English

INTERFACE LANGUAGES



BRIGHTNESS & SOUND

Screen brightness and sound volume are adjustable.

LANGUAGE

Select "简体中文" or "English" to switch the language. The device interface is available in Simplified Chinese and English.

DATE & TIME

Set the date and time on the settings page.

ADVANCED — STANDBY TEMPERATURE HOLD

Default temperature 400°C and hold time 30 min. Auto start switch: ON / OFF (default OFF). The Advanced page also contains Max VAC (maximum vacuum) and TC (temperature correction) — see Section 04. Press SAVE to store the values.

ENGINEER MODE

Engineer mode is listed on the settings page.

VACUUM & CALIBRATION

VACUUM · MAX VAC (ADVANCED PAGE)

0°C

UNIT: kPa · SET ACCORDING TO LOCAL ATMOSPHERIC PRESSURE

VMAX = 97%

FINAL VACUUM DEGREE

-50 ... +50

TEMPERATURE ADJUSTMENT

VACUUM SETPOINT

The vacuum degree setting depends on the local altitude (unit: kPa). Set the vacuum degree according to the local atmospheric pressure. It is recommended to set it 5 lower than the local average atmospheric pressure, and the maximum value must not exceed 99.

RECOMMENDED SETTING

LOCAL AVERAGE ATMOSPHERIC PRESSURE – 5 kPa (maximum 99)

Examples: local pressure 102 kPa → $102 - 5 = 97$. Local pressure 110 kPa → $110 - 5 = 105 > 99$ → set 99.

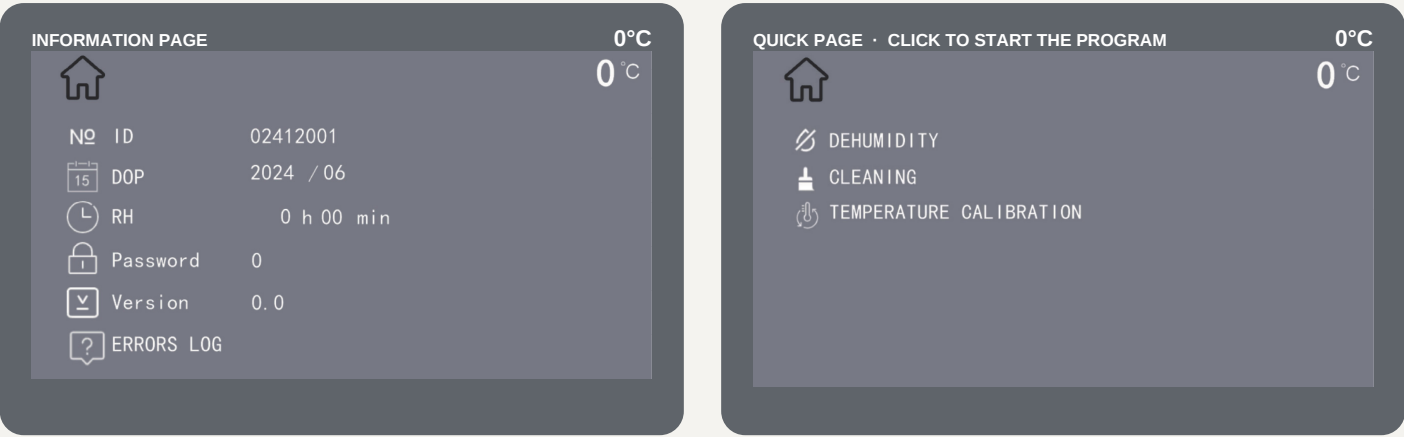
TEMPERATURE ADJUSTMENT

Manually corrects the temperature sensor value; adjustment range –50 to +50. It takes effect automatically after leaving the settings page. Example: "+10" means that while the heating program is running, the actual temperature in the furnace is 10°C higher than the temperature displayed on the screen. The temperature in the top-right corner of the screen is the actual temperature.

WHERE TO SET

Both values are on the Settings > ADVANCED page: Max VAC (kPa) and TC (temperature correction). Press SAVE to store them.

INFO & QUICK PAGE



INFORMATION PAGE

Displays the device ID, date of production (DOP), running hours (RH), password, software version and the errors log. Note these details before contacting technical support.

PASSWORD — 500 WORKING HOURS

Less than 500 working hours: no password is required to use the device. More than 500 working hours: the device works normally when the password is correct; the device locks when the password is incorrect and can only be unlocked after the correct password is entered. Note: do not change the correct password, otherwise the system will be locked.

QUICK PAGE PROGRAMS

- 01

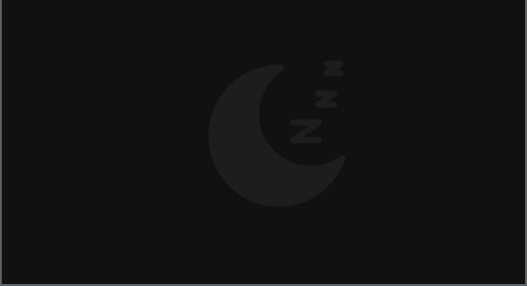
DEHUMIDITY
Drying program (P62). Run it before daily use. In humid seasons the drying time must be set above 6 minutes.
- 02

CLEANING
Cleaning program (P61). Run it weekly. After completion, check whether there is water in the cup of the vacuum pump and clean it up if there is.
- 03

TEMPERATURE CALIBRATION
Manual correction of the temperature sensor value (–50 to +50). See Section 04.

NIGHT PROGRAM & STATE

NIGHT PROGRAM0°C



100°C

NIGHT HOLD TEMPERATURE

STATE PAGE0°C



°C RT0°C

% RH0%

✓ U-in0V

NIGHT PROGRAM

When you start the night program, the screen turns dark and the furnace door closes. The furnace keeps the temperature at 100°C until the user manually exits (click the moon icon in the centre of the screen), then the furnace door opens.

STATE PAGE

View the real-time room temperature (RT), humidity (RH) and voltage (U-in).

REAL-TIME VALUES

RT

ROOM TEMPERATURE

RH

RELATIVE HUMIDITY

U-in

INPUT VOLTAGE

EXIT

Click the moon icon in the centre of the screen to leave the night program; the furnace door opens.

DIAGNOSIS & PROGRAM GROUPS

DIAGNOSIS PAGE

0°C

0°C

Vacuum system diagnosis

CURRENT VAC:- 0 KPa

↑

↓

AUTOTEST

TART

STOP

TEST

PUMP-START

PUMP-STOP

STOP

20

PROGRAM GROUPS

10

PROGRAMS PER GROUP

DIAGNOSIS PAGE

There are Autotest and Test on the diagnosis screen. When you click "PUMP-START" in Test, the current vacuum test is performed. When Autotest is started, the furnace door is raised manually and the automatic vacuum detection is performed.

PROGRAM GROUP PAGE

There are 20 groups for users to save heating programs in categories. Swipe left or right to switch pages. Press and hold the group icon for more than 2 seconds to modify the group name. The group name must not exceed 6 Chinese characters or 12 English characters.

PROGRAM GROUP PAGE · PROGRAM LIST · CONFIRM BOX

0°C

1

Group 1

2

Group 2

3

Group 3

4

Group 4

5

Group 5

6

Group 6

7

Group 7

8

Group 8

9

Group 9

10

Group 10

PROGRAM GROUPS (1/2)

0°C

010 Program 1

011 Program 2

012 Program 3

013 Program 4

014 Program 5

015 Program 6

016 Program 7

017 Program 8

018 Program 9

019 Program 10

PROGRAM LIST

0°C

010 Program 1

011 Program 2

012 Program 3

013 Program 4

014 Program 5

015 Program 6

016 Program 7

017 Program 8

018 Program 9

019 Program 10

Please confirm

Run Edit Cancel

RUN / EDIT / CANCEL

PROGRAM LIST PAGE

Each group can save 10 heating programs. Click a program to pop up the prompt box: Run / Edit / Cancel. Note: the program name cannot be modified on this page.

PROGRAM EDITOR

20 GROUPS × 10 PROGRAMS =

200

EDITABLE HEATING PROGRAMS

PROGRAM 001 · EDIT PAGE

0°C



001 Program 1

0 °C

START TEM 403 °C

DT-OUT 3 m 0 s

DT-IN 3 m 0 s

Hedting Rate 80 °C/min

Target TEM 980 °C

Holding time 1 m 0 s

2nd Hedting OFF

Hedting Rate 0°C/min

Target TEM 0 °C

Holding time 0 m 0 s

PUMP ON

VC: 100 %

PUMP-ON TE 550 °C

PUMP-OFF

End of heating ☒ End of keeping ☐

DOWN TEM OFF 0 °C

DOWN time OFF 0 m 0 s



SAVE

EDIT & SAVE

Click "Save": the editing page is exited automatically when the values are in the reasonable range. If unreasonable parameters are entered, the content turns red and cannot be saved; the program is saved only when reasonable parameter values are entered. The values of the parameters above automatically become 0 when the corresponding switches are turned off.

PROGRAM NAME

The program name cannot exceed 6 Chinese characters or 12 English characters. It cannot be modified on the program list page.

01

CHOOSE GROUP

02

SELECT PROGRAM

03

TAP EDIT

04

ENTER VALUES

05

SAVE

PROGRAM PARAMETER RANGES

PARAMETER	RANGE	UNIT
Program name	Cannot exceed 6 Chinese characters or 12 English characters	—
Starting temp.	100 ~ 800	°C
Heating rate (stage 1 & 2)	1 ~ 100	°C/min
Temperature (stage 1)	200 ~ 1200	°C
Temperature (stage 2)	250 ~ 1200	°C
Holding time (stage 1 & 2)	10 s ~ 120 min	min : s
Vacuum degree	0 ~ 100	%
Temp. vacuum on	≥ Starting temp.	°C
Temp. door open	400 ~ 900	°C
Drying time	0 ~ 60 min	min : s
Cooling time	0 ~ 30 min	min : s

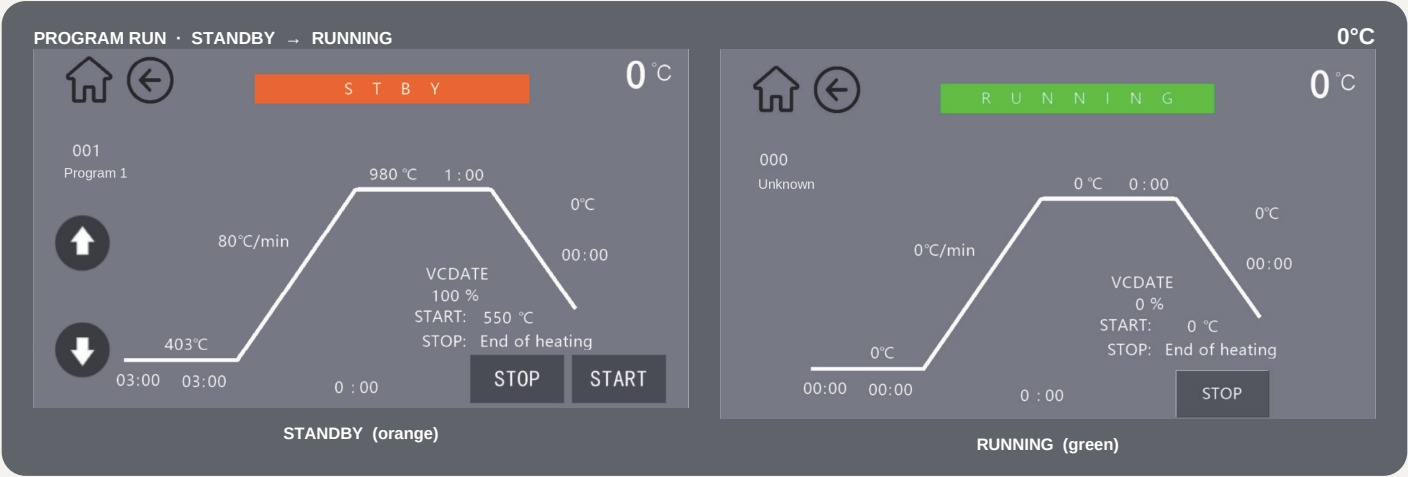
MAXIMUM WORKING TEMPERATURE

The program editor accepts stage temperatures up to 1200°C; the rated maximum working temperature of the furnace is 1150°C (see Technical Specifications).

AUTOMATIC ZEROING

Parameters controlled by a switch (2nd heating, pump, down temperature, down time) automatically become 0 when the corresponding switch is turned OFF.

RUNNING A HEATING PROGRAM



- 01 STANDBY**
When the screen shows "Standby", the furnace door opens and the furnace starts heating up to the starting temperature.
- 02 PLACE THE RESTORATIONS**
Place the restoration(s) to be fired on the firing tray.
- 03 CLICK "START"**
"Standby" changes to "Running", the background colour changes from orange to green, the "Start" button disappears and the heating program starts.
- 04 COMPLETION**
After completion a window pops up and a prompt sound is played.
- 05 CLICK "FINISH"**
Click "Finish" at any time and the furnace door opens.

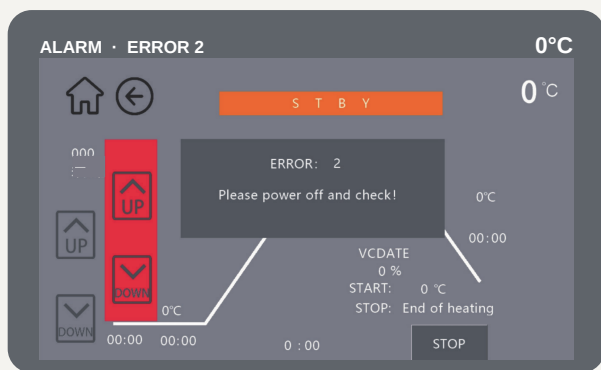
STATUS COLOURS

STANDBY

RUNNING

ERROR

ERROR CODES & TROUBLESHOOTING



WHEN AN ERROR OCCURS

The prompt text shows "ERROR" with the error code, the background turns flashing red and music is played. After eliminating the error, press and hold the red area for 2 seconds to clear the alarm.

01

TEMPERATURE SIGNAL ACQUISITION ERROR

Check whether the line connection is good. Replace the sensor if the sensor wire is broken.

02

TEMPERATURE SENSOR POLARITY ERROR

Reconnect the temperature sensor cable by swapping its positive and negative poles.

03

SCR (SILICON CONTROLLED RECTIFIER) ERROR

Replace by professionals.

04

HEATING WIRE ERROR

Professionals are required to check whether the line connection is good, or replace the heating wire with the same specification.

05

VACUUM RELEASE ERROR

Check whether the bleed solenoid valve is working, or whether the pipeline system is dirty or blocked; clean or replace it.

06

TRAY LIFTING ERROR

Check the lifting limit switch or the drive motor.

07

TRAY DOWNING ERROR

Check the downing limit switch or the drive motor.

08

NO VACUUM

Check if the vacuum pump is working or whether the furnace door is closed.

09

ABNORMAL TEMPERATURE / LARGE TEMPERATURE DIFFERENCE

Check if there are other high-power supplies on the same power line.

MAINTENANCE

GENERAL

- 1 Keep the device body clean and tidy, and keep it ventilated.
- 2 Check the appearance of the power cord for damage; do not stack flammable items around the device.
- 3 Do not operate the screen with sharp objects.
- 4 Keep the surroundings of the device clean; dust and particulate matter may cause errors.

DAILY

- 1 Run the P62 drying program before daily use.
- 2 Wipe the sealing ring every day.
- 3 Lift up the firing platform after daily use to maintain a constant temperature and extend the lifetime of the device.

WEEKLY

- 1 Run the P61 cleaning program weekly.
- 2 After completion, check whether there is water in the cup of the vacuum pump; if there is, clean it up in time.

HUMID SEASONS

- 1 The drying time must be set above 6 minutes in humid seasons.

SAFETY REMINDER

The power must be off when cleaning and maintaining the device. If the furnace or its spare parts are damaged, contact SPECTRA CERAM technical support for repair or replacement before use.

Never operate the touchscreen with sharp tools.

TECHNICAL SPECIFICATIONS



CF-100

PORCELAIN FURNACE

TWO-STAGE HEATING

200 EDITABLE PROGRAMS

NIGHT PROGRAM (100°C HOLD)

VACUUM SYSTEM DIAGNOSIS

INPUT VOLTAGE

230 V

MAXIMUM INPUT POWER

1200 W + 350 W

FINAL VACUUM DEGREE

VMAX = 97%

FURNACE AVAILABLE DIMENSION

Ø 85 × 55 mm

PROTECTION GRADE

IPX1

NET WEIGHT

27 kg

HEATING RATE

1 ~ 100 °C/min

MAXIMUM WORKING TEMPERATURE

1150 °C

TEMPERATURE CONSTANT TIME

10 s ~ 120 min

FUSE 1

~ 3.0 A

FUSE 2

~ 8.0 A

OVERALL DIMENSION (W × D × H)

33 × 42 × 56 cm

Specifications may be updated without prior notice.

SPECTRA

PRECISION IN EVERY FIRING.



TECHNICAL SUPPORT & SERVICE

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DOCUMENT

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