Programat®

A story of success

40 YEARS

Programat® Technology

ivoclar vivadent

passion vision innovation

40 years
Programat® technology

197

1981

Programat® P20

1984

1987

Programat® P95

1990

Programat® P10

Programat® P90

1997

1997

Programat® P80

Programat® X1

1999

Programat® P100

Programat® P200

2003

Programat® P700

2005

2007

Programat® P300

Programat® P500

76
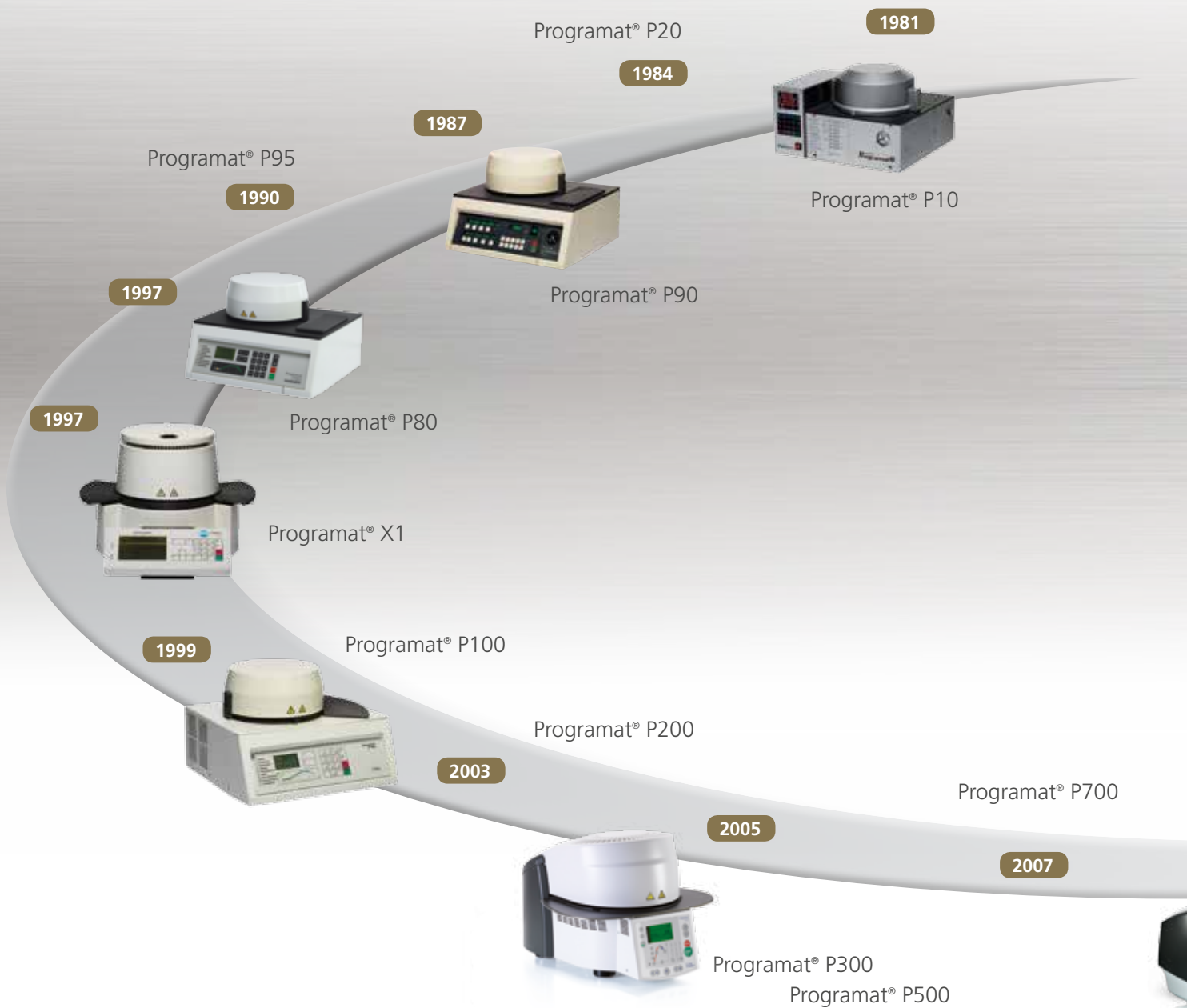
Programat® P1

40 years of innovation

Forty years ago, the first Programat furnaces were tested in the dental market. In 1977, the Programat P1 was presented to a specialist audience for the first time at the International Dental Show in Düsseldorf, Germany. Already at that time, the opening mechanism of the shell-shaped furnace head caused a sensation. Since then, one innovation has followed the next. The Programat brand has embarked on an upward trajectory all around the world and is now the market leader in ceramic furnaces*.

Thousands of happy customers

Today's Programat platform comprises three ceramic furnaces for dental technicians. However, first and foremost the company owes its success to the thousands of customers who have set their sights on innovation, ease of operation, high quality standards and durability. The furnaces facilitate the day-to-day work of dental technicians, deliver reliable results and offer a certain measure of comfort.

* based on sales figures

2013

Programat® P310
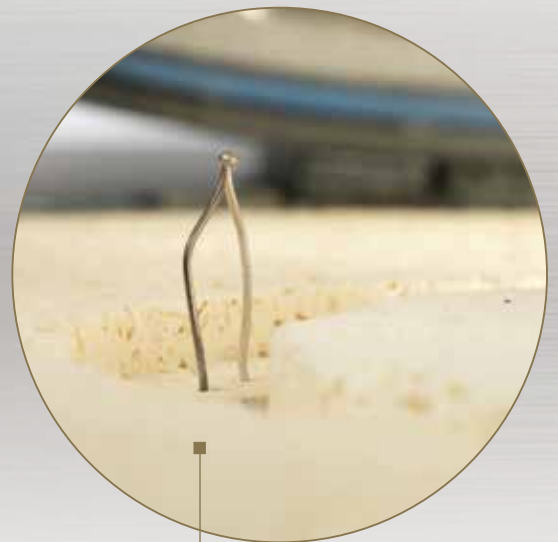Programat® P510

2016

Programat® P710

The correct temperature

1976

Programat® P1

A platinum thermocouple integrated into the lower part of the Programat P1 measures the temperature in the firing chamber. The temperature reading is shown on a 7-segment display. With a basic rotary potentiometer, the temperature can be controlled up to 1,180 °C.

Platinum thermocouple for measuring the firing temperature

1976

• Swivelling furnace head

• Modular design with removable furnace head, electronic controls and cooling tray

• Compact unit with five programs

2016

Programat® P710

The Programat P710 is equipped with a built-in infrared camera in addition to an integrated thermocouple. The infrared camera identifies the restorations in the firing chamber and measures the temperature on the objects to be fired without touching them. The software then evaluates the readings. This technology is unique in the field of dental ceramic furnaces and makes the Programat stand out from all the other devices on the dental market.

Infrared technology

The furnace head and the heater are controlled with an infrared camera to ensure that the predefined temperature is consistently maintained on the object in the furnace during pre-drying.

Accurate calibration

1984

Programat® P10

Chemical and physical impacts such as contamination and residue brought into the firing chamber by the firing objects continuously cause slight shifts in the temperature characteristics. For this reason, it is recommended that the temperature is checked with an independent system and, if necessary, recalibrated from time to time.

In the past 40 years, the conventional silver test has become the established method for temperature calibration all around the world. Several factors come into play when using this method. The user decides on whether the temperature should be recalibrated upwards or downwards on the basis of the silver wire. The calibration procedure takes some time to complete.

Temperature is ideal   Temperature is too hot

1984

- Fully automatic vacuum ceramic furnace
- Microprocessor control
- Numeric keypad allowing convenient data entry
- Possibility of adjusting the closing time of the furnace head
- Display showing actual value and setpoint value
- Slow cooling function and automatic opening of the furnace head

2016

Programat® P510

The new Programat P510 and P710 furnaces are equipped with ATK2 technology (automatic temperature calibration 2). The process control function runs the calibration process automatically with the help of the ATK2 sample, using a highly accurate double range calibration method that involves two melting points. In the process, all influences (hot or cold insulation) which the furnace may have on the calibration are taken into account to ensure that all calibration cycles begin with the same conditions.

ATK2

The silver element melts at 962 °C.

Another special feature: The temperature is measured with the help of two reference points: The first is in aluminium at 660 °C and the second is in silver at 962 °C. These two reference points allow the furnace to be precisely calibrated for both low-fusing ceramics and conventional ceramics. Calibration is fully automatic and can be conducted during off-hours at night.
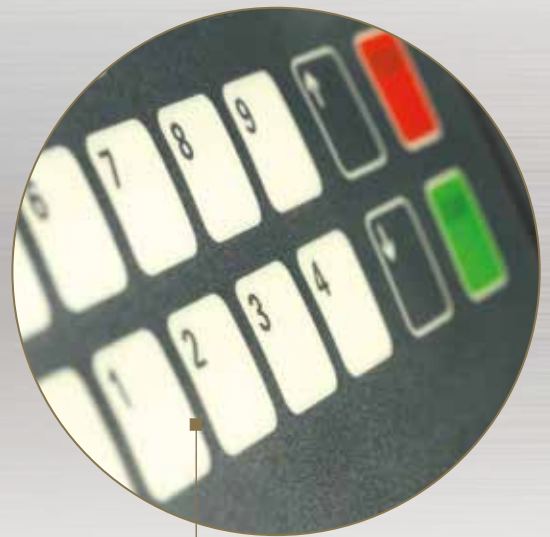
The aluminium element melts at 660 °C.
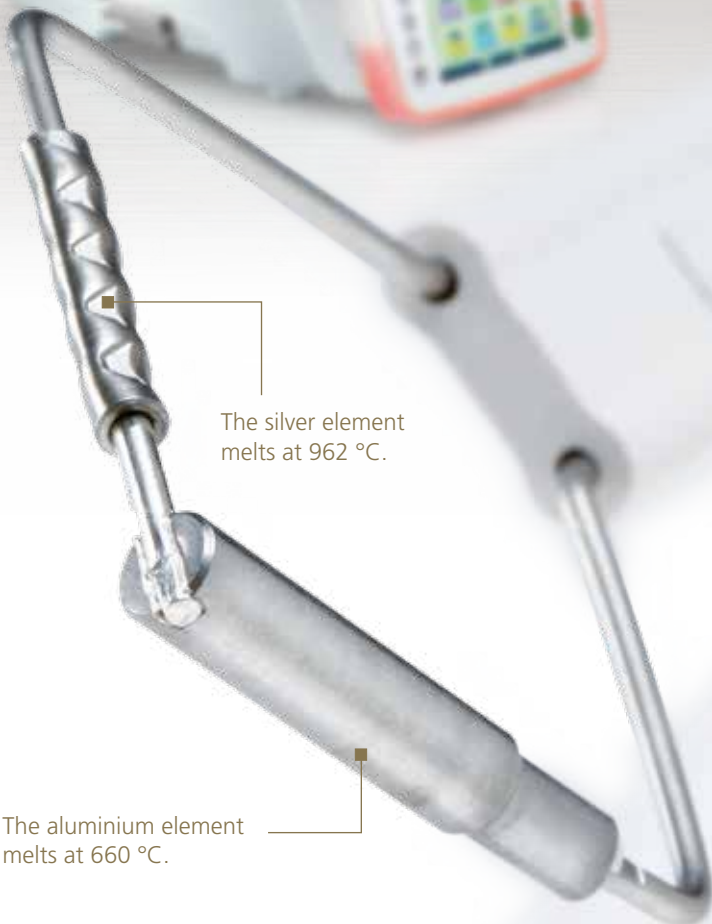
At the push of a button

1987

Programat® P90

The P90 made its debut on the dental market in 1987 and was the first Programat furnace to feature a membrane-sealed keypad. All essential parameters are shown in the 7-segment display above the parameter head and can be easily selected and changed via the keypad.

Numeric membrane-sealed keypad for an easy selection of parameters

1987

- Compact, timeless and practical design
- Easy-to-operate and easy-to-clean membrane-sealed keypad
- 5 special colour versions (RAL colours)
- 90 programs

We have been exclusively using Programat furnaces in our laboratory for many years. The furnaces are reliable, robust and easy to operate. The programs are perfectly matched to the ceramic materials from Ivoclar Vivadent. This gives us the reliability we need in our laboratory.

Christoph Zobler
Dental Technician, Austria

2016

Programat® P510

The Programat P510 furnaces are equipped with a 7-inch colour touch screen. In spite of its complexity, the furnace is easy to operate. Three clicks and the correct program is selected and started. The main functions (start, stop, open furnace head, etc) can be controlled via the proven membrane-sealed keypad. In addition, the furnace offers a selection of 25 languages and a voice output.

500 programs

All Ivoclar Vivadent programs are stored on the furnace and allocated to different material groups. In addition, 500 individually programmable programs are available.

Homogeneous
heat distribution

1997

Programat® P80

Heating elements must meet demanding requirements. They should offer a long service life and provide an even heat distribution in the firing chamber to ensure optimally sintered dental ceramics. In addition, they should provide quick and reliable heating across the entire temperature range.

The heating elements of the P80 are not yet encased in a quartz glass sheathing. This offers the advantages of a high heating performance and strong robustness.
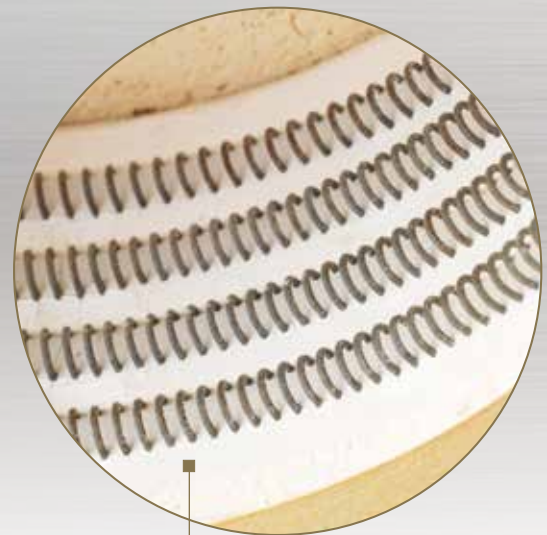
Heating wire
in the heating muffle

1997

- Electronic vacuum sensor and LED quality display
- Graphic firing curve display with LED display
- Removable furnace head
- Easy-to-replace heating elements
- Selectable acoustic signals
- 99 programs
- Possibility of using two-stage firing programs

Programat® P310, P510, P710

The new Programat P310, P510 and P710 furnaces feature the QTK2 muffle technology with SiC bottom reflector. An outstandingly powerful heating element is seated behind a quartz glass cylinder and enables an extremely homogeneous heat distribution in the firing chamber. Given the high-performance heating elements, the firing chamber can be heated at a rate of up to 140 °C per minute to a maximum temperature of 1,200 °C. The heat is transferred to the bottom of the furnace due to the interaction with the SiC bottom reflector and then reflected back.

QTK2 muffle technology

The new technology ensures an even temperature distribution in the firing chamber, providing dental technicians with consistent firing results.
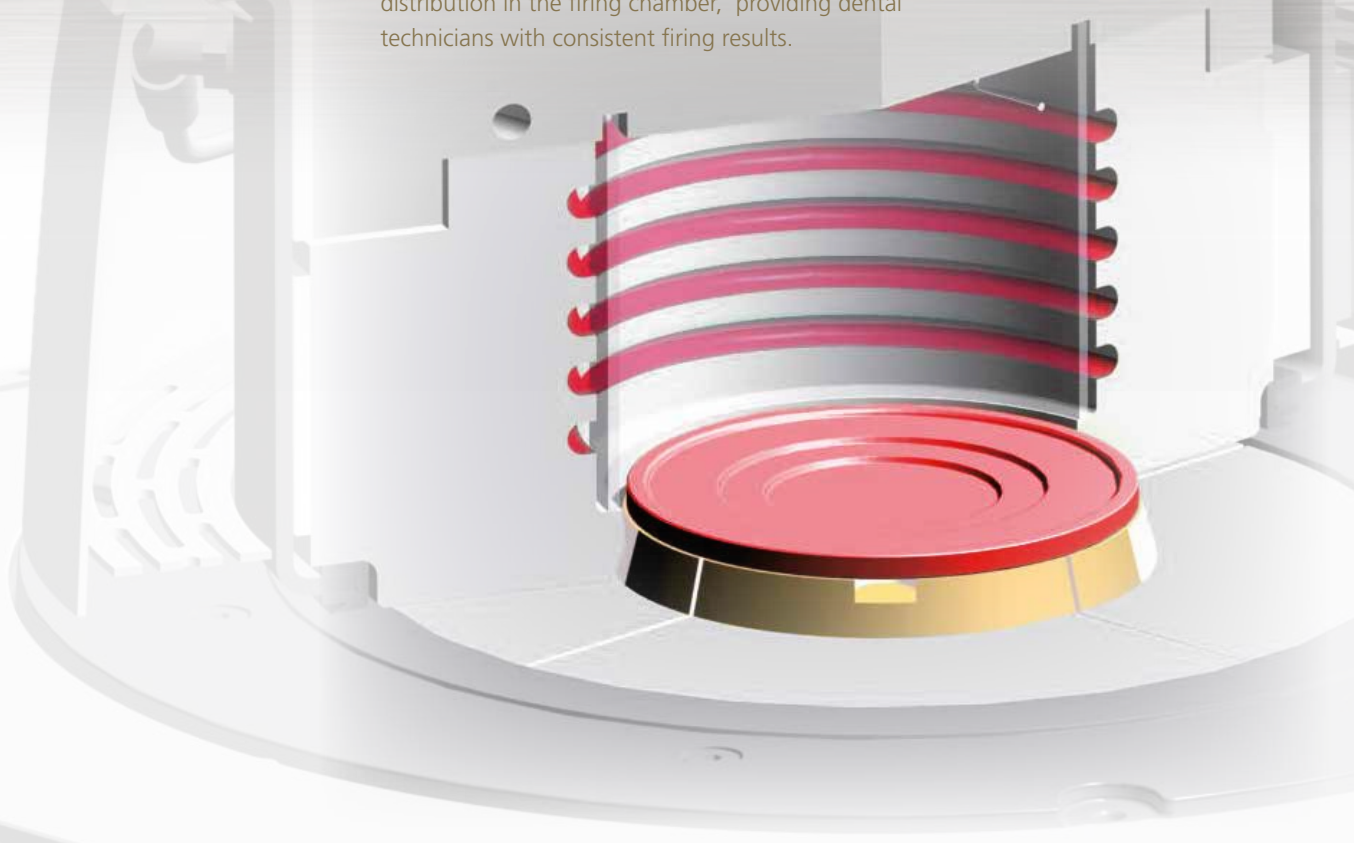
Multimedia
connectivity

1997

Programat® X1

With the Programat X1 in 1997, a futuristic and extravagant design entered the market. The furnace features a large monochrome graphic display. Users can choose between five languages to operate the unit. Data and parameters can be entered via the membrane-sealed keypad with a separate number block.

The screen displays not only figures and programs but also firing curves over several stages. A viewing window enables users to watch the progression of the firing procedure in the firing chamber. This is particularly convenient when performing soldering work or calibrating the furnace.
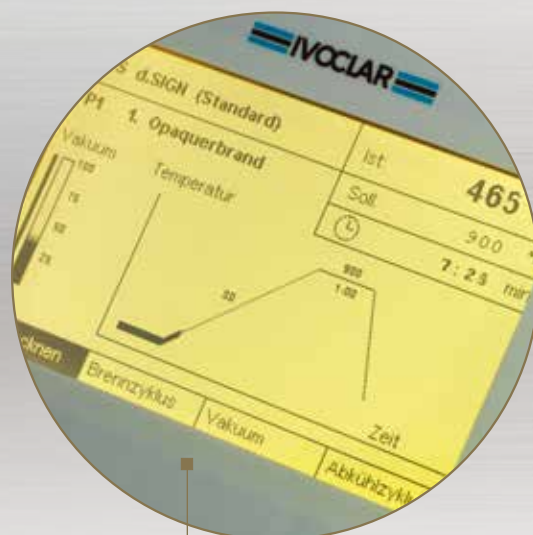
First large graphic display

1997

- Futuristic, extravagant design
- Large monochrome graphic display
- Viewing window to the firing chamber for optical control
- Tiltable keypad
- 99 programs

2016

Programat® P710

The 7-inch colour touch screen of the Programat P710 shows both programs and firing curves. But not only, the screen can also be used to view digital pictures and videos. The screen is in particular used for shade matching in conjunction with the integrated Digital Shade Assistant (DSA).

In addition, the furnace includes an MP3 player, PDF viewer and an automatic voice output in 25 languages.

Digitally networked

Users can connect their smartphones to the Programat furnace via the Bluetooth interface to establish hands-free telephone capabilities. So they can call up the dentist whilst their hands stay free.

The smartphone will also keep them informed about the status of the firing cycle in progress.

The new
furnace generation

40 YEARS
Programat® Technology

The current Programat furnace platform offers users a choice of three innovative models to suit their specific requirements. The Programat P310 meets the requirements for a straightforward ceramic furnace without too many additional functions. The Programat P510 has been designed for daily use and features an integrated infrared camera and a host of additional innovative features. The Programat P710 is the premium furnace in the X10 series designed to meet the most exacting requirements. It leaves virtually nothing to be desired.

All three furnaces are equipped with the QTK2 muffle technology and SiC bottom reflector to ensure optimum firing results.

P310

P510

▶ **Various communication interfaces (USB, Ethernet, SD card, WLAN, Bluetooth, etc)**

▶ **Automatic double-range temperature calibration (ATK2)**

EVEN MORE FEATURES

- PDF viewer
- Large cooling tray
- Modern acoustic signals
- OSD 2 operating and progress display
- Multimedia capabilities (pictures, MP3, videos)
- Easy operation via colour touch screen
- Diverse diagnostics, maintenance and test programs
- Integrated timer

▶ **Up to 700 individual programs**
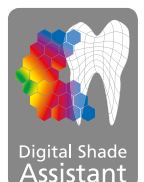
▶ **QTK2 muffle technology for a homogeneous heat distribution**

▶ **Modern, ergonomic design**

▶ **DSA – Digital Shade Assistant for digital shade matching**

P710

▶ **Infrared thermal imaging camera**

▶ **Vacuum parameter assistant for automatic parameter selection**

POWER SAVING
Technology

INFRARED TECHNOLOGY

Digital Shade Assistant

OVERVIEW OF THE MOST IMPORTANT MILESTONES AND INNOVATIONS

- **1976** New furnace head opening mechanism
- **1976** Modular furnace design
- **1984** Microprocessor control
- **1987** Easy operation with 7-segment display and membrane-sealed keypad
- **1997** Large graphic display and easy menu navigation
- **1997** PCIM expansion card slot
- **1997** EPD furnace head opening mechanism for ideal pre-drying
- **1997** PC printer connection for data transfer and quality control
- **1997** Noise-reduced vacuum pump control
- **1997** Power outage protection for up to 10 seconds
- **1997** EVCS for monitoring the vacuum quality
- **1997** Heating element in quartz glass sheathing for an even heat distribution
- **1997** Viewing window to see the firing chamber
- **1997** Operation in five languages
- **2000** Connection to wireless pager system
- **2003** Temperature-optimized and gentle flooding of the firing chamber
- **2005** Heating rate of up to 140 °C/min.
- **2005** ATK2 temperature control
- **2007** Large colour graphic display in combination with membrane-sealed keypad
- **2007** Integrated MP3 player
- **2007** Photo player for viewing pictures
- **2007** OSD operating status indicator
- **2007** TSP – Thermo-Shock Protection to protect the ceramics from thermal shock
- **2007** Integrated SD memory card reader
- **2007** USB port
- **2007** Ethernet port for device network
- **2007** PC remote control
- **2007** QTK muffle technology enabling homogeneous heat reflection
- **2009** Power Saving System
- **2013** OSD 2 operating and progress indicator
- **2013** Large colour touch screen in combination with membrane-sealed keypad
- **2013** IRT infrared technology to measure the temperature of the objects to be fired
- **2013** SiC bottom reflector
- **2013** Operation in 25 languages
- **2013** Video player
- **2013** WLAN interface
- **2013** Software update via USB flashdrive
- **2013** Double valve vacuum technology
- **2015** DSA – Digital Shade Assistant for shade matching
- **2015** Bluetooth hands-free telephone capabilities
- **2015** Gloss adjustment assistant for customized gloss adjustments
- **2015** PDF viewer
- **2015** Acoustic voice output in 25 languages

Programat®

A story of success

Economical
Efficient
Future-oriented

POWER
SAVING

Technology

Standby key to reduce power consumption

Efficient use of power and responsible use of valuable resources: Ivoclar Vivadent is committed to this goal. Therefore, we have fitted our Programat furnaces with the new power saving technology. In the stand-by mode, for example, the energy consumption of the furnace drops by up to 40 per cent. As a result, you save on electricity costs and and help to protect our environment at the same time.

Saving electricity is easy.
If the furnace is not being used, simply press the "Power Saving" key to activate the power saving mode.

Programat® Technology — 40 YEARS

See for yourself:
www.ivoclarvivadent.com/40years

ivoclar vivadent®
passion vision innovation