Biometra
An Analytik Jena Company

Performance
Simplicity Elegancy

The TProfessional
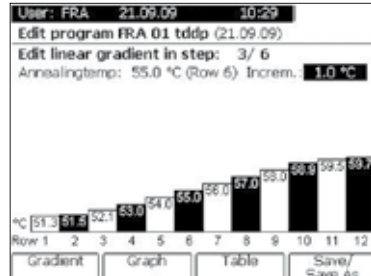## Thermocycler Family

TProfessional Family
User Interface

TProfessional User Interface

The **TProfessional User Interface** incorporates Biometra's proven spreadsheet programming philosophy. All steps of a program are entered in a single screen avoiding endless serial program windows. This makes the creation of new or editing of existing programs fast and easy. One touch leads from the spreadsheet to the alternative graphical programming mode. Programming of gradients has never been easier due to the linear gradient tool.
The **TProfessional** manages up to 30 individual users (optionally password protected) and features larger memory for increased program capacity. Supervisor functions provide easy administration of user directories.

Convenient set up of temperature gradients

Gradient steps are defined in the programming spreadsheet or a graphical screen, showing the individual temperature for each row. Alternatively, in the linear gradient screen a temperature gradient with defined increments can be set.

Quick start of the last five programs

The **TProfessional** displays the five most recently used programs for quick start. Thus, commonly used programs can be started without searching the user directory. The last programs are stored for each user individually.

Easy spreadsheet progamming ...

All program steps are entered in a single screen, thus avoiding endless serial program windows.

Spread sheet mode
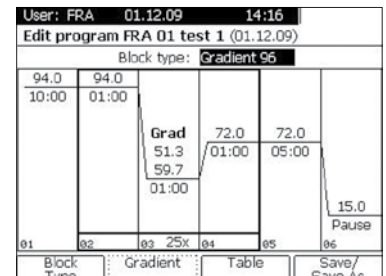
... or graphical editing.

In addition to spreadsheet programming, the **TProfessional** allows editing in the graphical mode. Using this option an existing program is quickly modified and can be saved under a new name.

Graphical mode

TProfessional Family

The Biometra *TProfessional Thermocycler Family* is inspired by the idea to simplify molecular biology research. Driven by Biometra's 20-year experience in Thermocycler design and production the *TProfessional Thermocyclers* were developed to set new a unrivalled standard. The instruments combine high end technology with functional and elegant design. Due to the energy efficient design of the housing, lid and block very high speed and excellent temperature uniformity are realised. Maximum comfort is provided to the user by the large display and innovative operating software. The result is three easy to use instruments with excellent technical specifications and highest ease of use:

1. TProfessional Basic for routine applications
2. TProfessional Standard with high speed silver block for advanced demands
3. TProfessional with high speed silver block and block exchange system for maximum flexibility
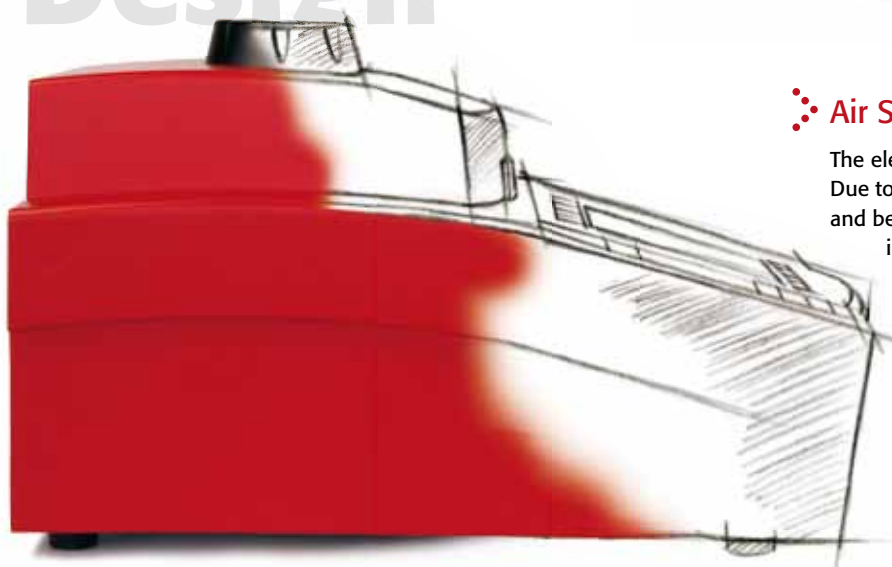
TProfessional Lid

The **TProfessional Lid** has been optimised to achieve two essential requirements: prevention of condensation and reliable contact between samples and thermoblock. The lid is powered by Biometra's well known Smart Lid technology with integrated clutch mechanism which automatically limits the lid pressure applied to the plasticware and thus saves tubes from damage. This also ensures reproducible conditions amongst different PCR runs.

In addition, due to the new design of the High Performance Smart Lid, by formation of a homogeneous air cushion an even temperature distribution between the samples is ensured, significantly improving temperature uniformity.

With one press on the front button, the lid gently swings open and arrests in its end position. Moreover the robustness of the lid's mounting serves for a long lifetime.

Air Stream Design

The elegant **TProfessional** housing is designed for heavy use. Due to an optimised air stream design even higher efficiency and better temperature uniformity is achieved. Therefore the instrument works quietly and consumes little power which in turn leads to low heat emission. The compact footprint saves valuable bench space. Keypad and display have been set to an angle that ensures reflection-free viewing and ergonomic programming.

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TProfessional
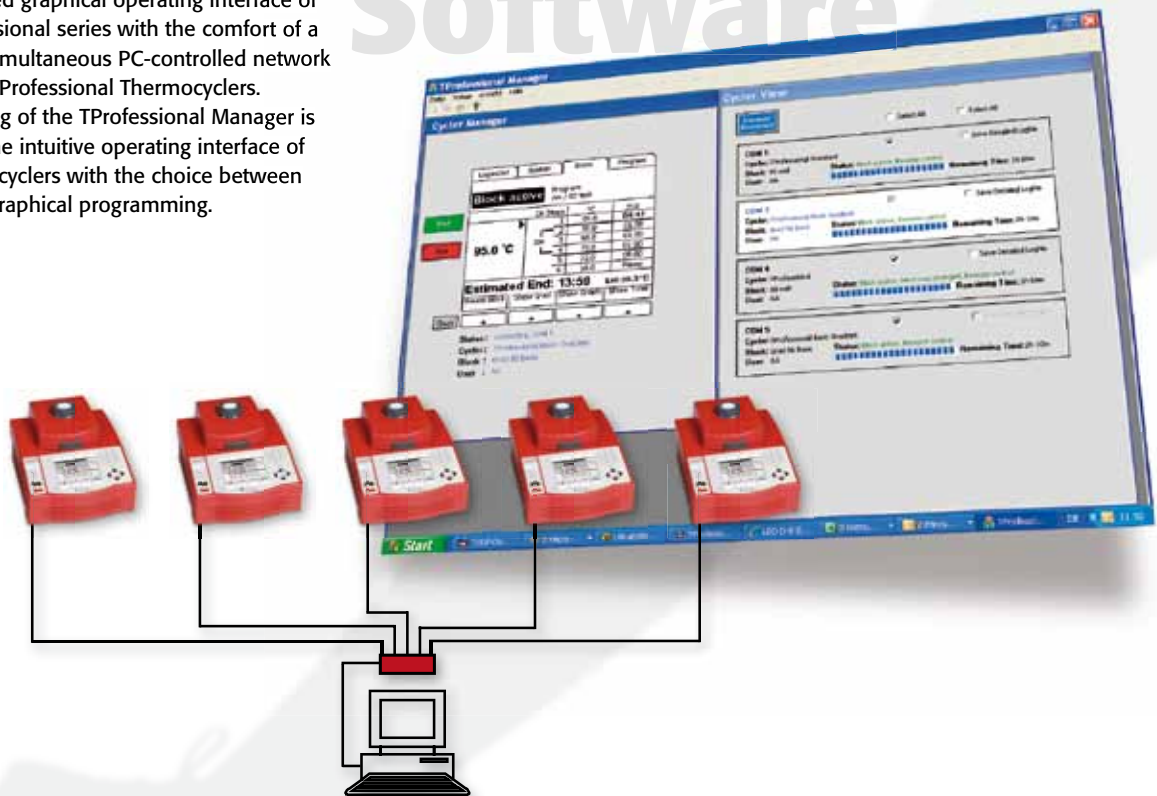## Manager Software

TProfessional Manager Software

The TProfessional Manager Software allows to control up to 5 Thermocyclers of the TProfessional family in a powerful network. PCR runs can be managed and monitored and versatile memory management functions allow easy synchronisation of the connected TProfessional Thermocyclers. Detailed run log files provide GLP conform documentation of PCR runs.

Features
User interface like on the TProfessional Thermocyclers
Open, edit and save programs
Copy programs and user directories
MCF – memory cloning function
GLP conform documentation

User Interface

The TProfessional Manager Software combines the approved graphical operating interface of the TProfessional series with the comfort of a powerful, simultaneous PC-controlled network of up to 5 TProfessional Thermocyclers. The handling of the TProfessional Manager is based on the intuitive operating interface of the Thermocyclers with the choice between tabular or graphical programming.

Memory Management

The software allows the user to create, edit and save programs. Single user directories and programs can be easily copied and exchanged between the PC and the TProfessional Thermocyclers. The MCF – Memory Cloning Function – allows to copy the complete memory contents between different TProfessional Thermocyclers.

Documentation

For GLP conform documentation of PCR runs detailed log-files with temperature data can be generated and saved. By an extended self test service files are created that can be analysed by Biometra's service for rapid failure diagnosis when problems occur.

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Professional technology
for routine applications

TProfessional *basic*
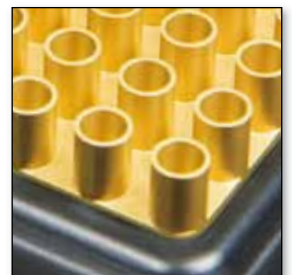Thermocycler

Gold Anodised 96 Well Block

The **TProfessional Basic Thermocycler** provides almost all the features of the **TProfessional Thermocycler**. However, the instrument is available at a budget price, that makes top technology also available for routine applications. The instrument features a gold anodised 96 well block with excellent temperature uniformity. A 96 well Gradient version for quick optimization of new protocols is also available.

The **TProfessional Basic** provides full functionality of easy spreadsheet and graphical programming as well as quick start of the last five programs.

Features

Large graphical display
Quick start of the last five programs
Gold anodised 96 well block
Gradient or non-gradient version
High Performance Smart Lid
Silent operation
Spreadsheet plus graphical programming
Linear gradient tool
Network capability
Pre-installed protocols
Fast PCR enabled

Gold Anodised
96 Well Block

TProfessional *Basic*

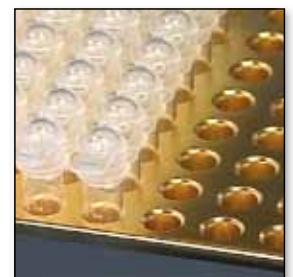| Order number		Block format	Suitable plastic ware
070-601	TProfessional Basic Gradient	96 well	0.2 ml tubes, plates, strips
070-701	TProfessional Basic	96 well	0.2 ml tubes, plates, strips

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Top Performance
for advanced demands

TProfessional *standard*
Thermocycler

High Speed Silver Block

To achieve ultimate performance the 96 well and 60 well modules are made of silver. Due to its excellent heat conductivity silver equilibrates extremely quickly, thus providing maximum speed and temperature uniformity. To protect the valuable silver blocks against corrosion, the block surfaces are covered with a thin gold layer.

The 96 well and 60 well modules are available with gradient option for quick optimization of new protocols. For high throughput purposes also a 384 well block is available.

Features
Large graphical display
Spreadsheet plus graphical programming
Quick start of the last five programs
High speed silver block
Five different block modules
High Performance Smart Lid
Silent operation
Linear gradient tool
Network capability
Pre-installed protocols
Fast PCR enabled

TProfessional *Standard*

Order number		Block format	Suitable plastic ware
070-950	TProfessional Standard 60	60 well	0.5 ml tubes
070-951	TProfessional Standard 96	96 well	0.2 ml tubes, plates, strips
070-952	TProfessional Standard 384	384 well	384 well plates
070-850	TProfessional Standard Gradient 60	60 well	0.5 ml tubes
070-851	TProfessional Standard Gradient 96	96 well	0.2 ml tubes, plates, strips

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Premium Performance
with maximum flexibility

TT Professional
Thermocycler

Exchangeable Block Modules

The TProfessional Thermocycler offers the same features like the TProfessional Standard but additionally is equipped with a quick block exchange system. It offers five different block modules that can be exchanged in less than 10 seconds.

Exchangeable
Block Modules

Features
Block exchange in less than 10 seconds
Large graphical display
Spreadsheet plus graphical programming
Quick start of the last five programs
High speed silver block
Five different block modules
High Performance Smart Lid
Silent operation
Linear gradient tool
Network capability
Pre-installed protocols
Fast PCR enabled

TProfessional

Order number		Block format	Suitable plastic ware
070-900	TProfessional 60	60 well	0.5 ml tubes
070-901	TProfessional 96	96 well	0.2 ml tubes, plates, strips
070-902	TProfessional 384	384 well	384 well plates
070-800	TProfessional Gradient 60	60 well	0.5 ml tubes
070-801	TProfessional Gradient 96	96 well	0.2 ml tubes, plates, strips

TProfessional exchangeable block modules

Order number	Block format	Suitable plastic ware	Max. heating / cooling rate
070-810	60 well Gradient	0.5 ml tubes	6.0 / 4.5 °C per sec
070-910	60 well	0.5 ml tubes	6.0 / 4.5 °C per sec
070-811	96 well Gradient	0.2 ml tubes, plates, strips	6.0 / 4.5 °C per sec
070-911	96 well	0.2 ml tubes, plates, strips	6.0 / 4.5 °C per sec
070-912	384 well	plates	2.2 / 1.7 °C per sec

	TProfessional	TProfessional Standard	TProfessional Basic
Block	High Speed Silver Block	High Speed Silver Block	Gold anodised 96 well block
Max. Heating*	6.0 °C/sec	6.0 °C/sec	3.5 °C/sec
Avg. Heating*	5.0 °C/sec	5.0 °C/sec	3.0 °C/sec
Max. Cooling*	4.5 °C/sec	4.5 °C/sec	2.5 °C/sec
Avg. Cooling*	3.5 °C/sec	3.5 °C/sec	2.0 °C/sec
Temp. uniformity	+/- 0.15 °C within 15 sec at 55 °C +/- 0.25 °C within 15 sec at 70 °C +/- 0.50 °C within 15 sec at 95 °C	+/- 0.15 °C within 15 sec at 55 °C +/- 0.25 °C within 15 sec at 70 °C +/- 0.50 °C within 15 sec at 95 °C	+/- 0.20 °C within 15 sec at 55 °C +/- 0.30 °C within 15 sec at 70 °C +/- 0.60 °C within 15 sec at 95 °C
Temp. gradient**	40 °C	40 °C	26 °C
Temp. range	3 °C to 99 °C	3 °C to 99 °C	3 °C to 99 °C
Control accuracy	+/- 0.1 °C	+/- 0.1 °C	+/- 0.1 °C
Block formats	60 well / 96 well / 384 well***	60 well / 96 well / 384 well	96 well
Block exchange	Within 10 seconds, automatic block recognition	-	-
Software options	Quickstart of the last five programs, program preview prior to start, toggle between spreadsheet and graphical mode, memory defragmentation tool, gradient temperature graph, adjustable ramp rates, extended self test, service files, PC control, pre-installed protocols, linear gradient tool		
Programming modes	Spread sheet plus graphical		
Display	¼ VGA screen, 320 x 240 pixel		
Memory	350 typical programs in up to 30 user directories (optionally password protected), supervisor mode		
Auto restart after power failure	Yes		
Heated lid	High Performance Smart Lid (HPSL)		
Lid temperature range	30 °C to 99 °C		
Power consumption	max. 480 Watt		
Power supply	100, 115, 230 Volt / 50-60 Hz		
Air is exhausted to	Rear		
Noise emission	Very low		
Interface	RS232 serial port		
Dimensions (W x D x H)	28 cm x 38 cm x 24 cm		
Weight	13.0 kg		

* Measured inside the block, depending on block type ** TProfesssional Gradient, TProfesssional Standard Gradient and TProfessional Basic Gradient
*** For alternative block modules see table "TProfessional exchangeable block modules"

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