FlexCycler²
The new Standard PCR-Thermocycler

- Multiblock start- and stop-function
- User-specific quick start of programs
- Wide choice amongst six different block modules

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The FlexCycler² is a modern thermal cycler with large graphical display and exceptional design. The instrument offers state-of-the-art heating and cooling rates in combination with high control accuracy. Thanks to the excellent temperature uniformity over the complete temperature range the system consistently ensures reproducible conditions. By the Quick-X-Change block exchange system the FlexCycler² can be flexibly adapted to different requirements. In combination with the user friendly software concept and extensive software options the FlexCycler² is the perfect system for PCR applications.

Features
- Quick-X-Change block exchange system
- Automatic block recognition
- 96 well and 48 well twin-block optionally with gradient function
- Twin-blocks independently controllable
- Multiblock start- and stop-function
- Large ¼ VGA display
- High Performance Smart Lid (HPSL) for always optimal contact pressure
- USB A and USB B port
- Comfortable user administration
- GLP compliant documentation of PCR runs
- Comprehensive additional software functions

Housing
The housing of the FlexCycler² attracts by its distinctive design with clear layout of the line and functionality. Due to the high quality of workmanship, the unit is designed for continuous use in the routine. For example, the airstream inside the instrument is optimized to dissipate excess heat as effectively as possible. This keeps the energy consumption low and the block temperature uniformity at any time in the optimum range. In addition, the FlexCycler² by its compact design occupies a minimum of space in the laboratory. The display and keyboard are arranged in an ergonomically angle, allowing the comfortable operation of the instrument and also preventing unwanted light reflections in the display from the surroundings

Block exchange system
By Quick-X-Change technology the FlexCycler² block modules can be exchanged within seconds. The built-in fast block exchange system makes the use of additional tools or the time-consuming loosening of block fittings unnecessary. Simply raise the block exchange lever, remove the block to be replaced, insert the new block and connect it to the base unit by lowering the block exchange lever. The new block is automatically detected and installed by the instrument. The block exchange function of the FlexCycler² provides the flexibility to adapt the configuration of the instrument in seconds. Besides single block modules also twin block modules are available which are equipped with two independently controllable blocks and heated lids. The twin block modules offer the possibility to run two different protocols at the same time, thereby increasing the flexibility for the user. Optionally blocks can also be equipped with gradient function which allows the quick and easy optimisation of new PCR assays.
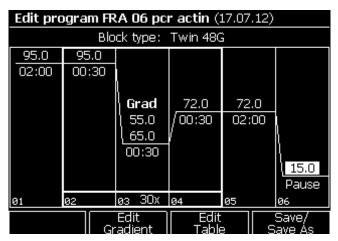
Heated Lid
The heated lid of the FlexCycler² is equipped with High Performance Smart Lid (HPSL) technology that ensures the formation of a homogenous tempered air cushion between the samples. The instrument therefore provides excellent temperature uniformity over the entire block and reproducible PCR conditions regardless of the positioning of the samples. Additionally, by the integrated clutch mechanism, it is ensured that always the same pressure is applied, regardless of the height and shape of the used plastic ware. The even distribution of pressure on all tubes/wells serves for a secure closure during the PCR and optimal temperature transition between the block and the reaction mix, simultaneously evaporation and condensation effects are avoided. After pressing the push button on the front the heated lid it automatically swings upand can subsequently be closed by gently pressure.

User Interface
The FlexCycler² user interface provides the convenience of a user-specific choice of operating language and allows the programming of temperature programs in clearly arranged table format (Easy Spreadsheet Programming (ESP)). All parameters can be set in one single screen, it is not necessary to open sub-windows to set variables for special program functions and to toggle forth and back between different windows. Simply press the "graph" button and the temperature profile can also be displayed graphically and parameters edited. The FlexCycler² offers a total memory capacity for more then 300 programs.

In addition to the programming of temperature protocols the software offers useful functions like extended self test, display of run-logfiles or the creation of service info files. After start of the extended self test, the FlexCycler² checks itself summarizes the results in a well arranged protocol. If the test should not be passed the user receives a corresponding message. In run-logfiles important information und events for the last run are summarized. Run-logfiles therefore are ideal to control and monitor PCR runs. In service cases service info files allow a remote diagnosis of the instruments status by the service department.

Tabular programming…

Edit program FRA 06 pcr actin (17.07.12)
Block type: Twin 48G

95.0	95.0	Grad	72.0	72.0	
02:00	00:30	55.0 65.0 00:30	00:30	02:00	15.0 Pause
01	02	03 30x	04	05	06

| | Edit Gradient | | Edit Table | | Save/ Save As |

◆ or graphical programming

User administration

The FlexCycler[2] can manage up to 30 different user directories which can be optionally protected by a PIN code. PCR protocols in protected directories can not be modified or deleted by other users. In addition to the normal users the supervisor (administrator) has additional privileges. The supervisor has its own menu to manage the system and can for example delete user directories (also protected directories). Moreover, the supervisor can set the boot language of the system.

User-specific quick start of protocols

The FlexCycler[2] logs user specific the five most recently used or modified protocols. By a simple keypress on "block" the user currently logged-in to the instrument gets a list of protocols that can be started directly. The comfortable quick start option eliminates the need to search for the right protocol in the user directory.

USB functions

By a USB stick temperature programs can be exchanged easily between different FlexCycler[2] instruments. Moreover for GLP compliant documentation of PCR runs run-logfiles and in service cases service info files can be saved. For this purpose standard USB sticks can be connected to the USB A port on the front side of the instrument. By the USB B port on the backside of the FlexCycler[2] software updates can be uploaded from a connected computer and installed conveniently.

Order information

Order number	Description
844-00060-2	FlexCycler[2] 96, 230V
844-00061-2	FlexCycler[2] 96G, 230V
844-00062-2	FlexCycler[2] twin 48, 230V
844-00063-2	FlexCycler[2] twin 48G, 230V
844-00064-2	FlexCycler[2] twin 30, 230V
844-00065-2	FlexCycler[2] twin combi, 230V
844-60060-0	FlexCycler[2] block 96
844-60061-0	FlexCycler[2] block 96G
844-60062-0	FlexCycler[2] block twin 48
844-60063-0	FlexCycler[2] block twin 48G
844-60064-0	FlexCycler[2] block twin 30
844-60065-0	FlexCycler[2] block twin combi
844-00069-2	FlexCycler[2] base unit

Technical data

Order number	844-00062-x 844-00063-x	844-00060-x 844-00061-x	844-00064-x	844-0065-x
	FlexCycler² twin 48 FlexCycler² twin 48G	FlexCycler² 96 FlexCycler² 96G	FlexCycler² twin 30	FlexCycler² twin combi
Capacity	2 x 48 x 0.2 ml tubes, 2 x 6 x strips of 8, 2 ml or 2 x 48 well microplates	96 x 0.2 ml tubes, 6 x strips of 8, 0.2 ml or 96 well microplates	2 x 30 x 0.5 ml tubes	2 x 48 x 0.2 ml tubes, 2 x 6 x strips of 8, 0.2 ml or 2 x 48 well microplates, 2 x 18 x 0.5 ml tubes
Block material	Aluminum	Aluminum	Aluminum	Aluminum
Block surface coating	Silver-coloured anodised	Silver-coloured anodised	Silver-coloured anodised	Silver-coloured anodised
Block exchange	Quick-X-change	Quick-X-change	Quick-X-change	Quick-X-change
Time block exchange	Less than 10 s	Less than 10 s	Less than 10 s	Less than 10 s
Maximum heating rate*	4.5 °C/s	4.0 °C/s	4.0 °C/s	3.0 °C/s
Maximum cooling rate*	4.5 °C/s	4.0 °C/s	4.0 °C/s	3.0 °C/s
Average heating rate*	4.5 °C/s	3.0 °C/s	3.3 °C/s	2.4 °C/s
Average cooling rate*	4.5 °C/s	3.0 °C/s	3.3 °C/s	2.4 °C/s
Gradient**	20°C	30°C	-	-
Temperature uniformity	< ± 0.4 °C at 70 °C after 15 s			
Temperature uniformity	3 °C to 99 °C			
Temperature range**	20 °C to 99 °C			
Control accuracy	± 0.1 °C			
Software	Quick start of the 5 latest programs, program preview, toggle between easy spreadsheet and graphical programming mode, graphical display of gradients, multiblock start- and stop-function, variable heating and cooling rates, extended self test, service info files for remote diagnosis, versatile USB-functions like storage of programs, run-logfiles or SINF-files			
Programming modes	Spreadsheet or graphical			
Program memory	350 programs in 30 user directories, optionally PIN-code protected			
Display	¼ VGA screen, 320 x 240 pixel			
Autorestart function	Yes			
Smart Lid technology	Yes			
Lid temperature range	30 to 99 °C			
Max. power consumption	600 Watt			
Operation voltage	100, 115, 230 Volt, 50-60 Hz			
Weight	15 kg			
Dimensions (W x H x D)	26.4 cm x 28.9 cm x 40.0 cm 26.4 cm x 47.9 cm x 40.0 cm with lid opened			
Noise emission	Very low			
Interfaces	USB A, USB B			
Working conditions	15 °C to 35 °C, 70 % humidity, max 2,000 m above sea level			

* measured inside the block
** only for gradient enabled models

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