





## »Eppendorf—designing instruments that fit the needs of today’s scientist.«

Do not let poor instruments compromise your PCR results. Eppendorf blocks show outstanding homogeneity and accuracy. Fast ramp rates are precisely controlled allowing fast and reproducible PCR runs. Programming is easy and protocols can be password protected. All this supports your constant strive for reproducible and meaningful results.

### Reproducibility

- > In PCR, precise and accurate block control is paramount
- > The Eppendorf blocks feature SteadySlope® gradient technology to ensure that ramp rates are identical in both gradient and normal mode.

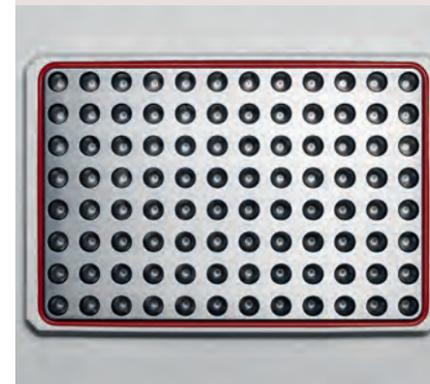
### Intuitivity

- > The graphic programming is quick, easy and intuitive.
- > Find all your protocols in your individual folder and protect them with a password.
- > Pause function, variable ramp rates and block modes and a lot more is at your disposal.

### Reliability

- > Specially designed lids reduce the evaporation during PCR and help to accommodate a wide variety of PCR consumables.
- > The solid handles allow one hand operation of the instrument. No turning knobs are needed to lower the heated lid.

Mastering PCR is easy—if you have the right equipment.



# Mastercycler® nexus X1



## flexlid® concept

> Automatic lid adjustment to height of consumables.

## One hand operation

> Open and close the lid while holding your plate.  
> No turning knob needed to lower the heated lid.  
> Reproducible lid pressure for reproducible results.

## Intuitive graphic programming

> Includes a protocol library, a folder for recently used protocols, a booking schedule and e-mail notification.

## Low energy consumption

> Optimized to very low energy consumption, including a stand-by function.

## Get connected

> USB port for data transfer and mouse connection. Up to 2 more units can be connected via CAN\_BUS to the central unit for higher throughput.

## Low noise emission

> With its ultra-quiet ventilation, noise levels of < 40dB[A] are achieved. Enjoy it!

## Pure Silver

The new Mastercycler nexus X1 combines the modern and intuitive software from the Mastercycler nexus with a fast 96-well silver block for increased heating and cooling rates. It is fast, easy to use, does not need much space or energy and sends you an e-mail when it is done—what else do you need from a PCR cycler?

## Combine, Connect, Control

> Combine up to 3 units for maximum throughput!  
> Connect your Mastercycler nexus to your computer network and get a status e-mail to your desk!  
> Control all the relevant parameters of your PCR through the intuitive software

## Do you need a fast, intuitive and reliable PCR instrument?

The Mastercycler nexus X1 is exactly that. It brings the reliability and ease of use of Mastercycler nexus at the speed of a silver block. Low energy consumption, easy expansion to 3 units and a small footprint make it even more attractive.

## Product features

> Heating rate: 5°C/s  
> Fast silver block  
> Small footprint  
> Intuitive graphic programming  
> Up to two other units can be connected to a central unit  
> E-mail notification  
> flexlid concept: automatic height adjustment of the lid allows you to use all types of consumables  
> 2-year warranty  
> Optional self-test functionality

## Applications

> Fast PCR  
> Standard PCR  
> Cycle sequencing

# Mastercycler® nexus flat

»To raise new questions, new possibilities, to regard old problems from a new angle, requires creative imagination and marks real advance in science.«

Albert Einstein

### When you need even more flexibility

Special applications require special consumables. With its flat block and no wells, the Mastercycler nexus flat offers the optimal foundation for slides and other unconventional consumable formats.

If you want to do in situ PCR, your results are normally influenced by the characteristic temperature transfer of the corresponding in situ adapter. The Mastercycler nexus flat can heat and cool your slides directly without the need for an adapter!

### Product features

- > Flat block without wells
- > Intuitive graphic programming
- > Small footprint
- > Up to two more units can be connected to the central unit
- > E-mail notification
- > 2-year warranty
- > Optional self-test functionality



### Certified Quality

- All Eppendorf cyclers follow these quality guidelines:
- > Individual, documented quality control certificates
  - > Calibration accordingly to national and international standards: NIST (USA), DKD/PTB (Germany), UKAS/NPL (UK)
  - > UL/cUL listed

# Mastercycler® nexus

### PCR next to me

In the age of networking, the new Mastercycler nexus is your reliable companion when it comes to the daily routine of PCR. It can accommodate 96-well PCR plates, 0.2 mL PCR tubes, 0.2 mL PCR tube strips and 0.5 mL PCR tubes. It is easy to use, does not need much space or energy and sends you an e-mail when it is done.

### Combine, Connect, Control

- > Combine up to 3 units for maximum throughput!
- > Connect your Mastercycler nexus to your computer network and get a status e-mail to your desk!
- > Control all the relevant parameters of your PCR through the intuitive software

### Product features

- > Universal block for plates, 0.2 mL and 0.5 mL PCR tubes
- > Small footprint
- > Intuitive graphic programming
- > Up to two other units can be connected to a central unit
- > E-mail notification
- > flexlid® concept: automatic height adjustment of the lid allows you to use all types of consumables
- > 2-year warranty
- > Optional self-test functionality



Choose the block format that is best for your PCR

### Applications

- > Standard PCR
- > Cycle sequencing
- > In situ PCR with adapter

## PCR Consumables

### In good company—high quality consumables

Every researcher doing PCR always wonders about the best instrument, the best master mix, the best polymerase. Also when it comes to choosing the plastic consumables that build the connection between PCR instruments and your precious sample, the same rationality and prudence should be applied.

Different consumables can make a huge difference in the quality and reproducibility of your PCR results. Wall thickness, thermal conductivity of the material, mechanical stability and many other technical characteristics will have a direct impact on your experiment and subsequently the results. Make sure you use the best PCR consumables for your application!

- > 96-well and 384-well PCR plates for high and medium throughput
- > Divisible plates, PCR tubes and tube strips for lower throughput
- > Sealing options, racks and other accessories for an optimized workflow

> For more information, visit [www.eppendorf.com/pcr](http://www.eppendorf.com/pcr)



# Mastercycler® pro

## Reproducibility at its best

Getting reproducible results quickly—that is vital for PCR in any application. The Mastercycler pro is unparalleled in its ability to fulfill this requirement. The vapo.protect™ concept reduces evaporation to a minimum. Therefore, concentrations in your PCR master mix remain consistent—minimizing non-specific binding beyond importance. The high heating and cooling rates of the Mastercycler pro S give you the speed you need. Unsurpassed speed can be achieved with Impulse PCR, a hot-start function that increases heating rates to 8 °C/s.

## Stop evaporation effectively!

The flexible fit of the fluid cushion minimizes evaporation of your reaction considerably. Only 0–3 % of the reaction volume evaporates using the new vapo.protect™ technology.

Thermocyclers of other suppliers show evaporation of up to 10 % in the center and up to >50 % at the corner positions of the block.

Thus, the vapo.protect™ technology leads to improved reproducibility and specificity at the rim and in the corners of the block.

## Utmost Flexibility

The Mastercycler pro can be run as a stand-alone unit. However, the Control Panel can control up to 5 different units, giving you higher throughput. If even higher throughput is needed, up to 30 units of any block format combination can be controlled with one computer. The advanced Cycle-Manager pro software offers a client/server architecture, that enables one to check the status of the PCR from any computer in your local network. All collected data is archived in a database. If you are working in a GLP environment, your documentation needs will be strongly supported by the software.

## Product Features Mastercycler pro

- > Ultimate reduction of evaporation
- > Extremely fast heating and cooling rates
- > Intuitive graphic programming
- > Gradient blocks with SteadySlope technology
- > Up to 5 units can be networked using a Control Panel
- > Up to 30 units can be networked using a PC software
- > Display indicates cyclor number in a network
- > 2 year warranty
- > Optional self-test functionality



Technical Specifications	Mastercycler® pro	Mastercycler® pro S	Mastercycler® pro 384	Mastercycler® nexus gradient	Mastercycler® nexus	Mastercycler® nexus eco***
						
<b>Thermoblock</b>	Aluminum	Silver	Aluminum	Aluminum	Aluminum	Aluminum
<b>Sample Capacity</b>	96 × 0.2 ml PCR tubes or 1 × 96-well PCR plate		1 × 384-well PCR plate	96 × 0.2 mL PCR tubes or 1 × 96-well PCR plate or up to 71 × 0.5 mL PCR tubes		
<b>Temperature control range of the block</b>	4–99 °C			4–99 °C		
<b>Temperature control mode</b>	Fast, Standard, Safe			Fast, Standard, Safe		
<b>Heating technology of the block</b>	Peltier elements, Triple Circuit Technology			Peltier elements, Triple Circuit Technology		
<b>Gradient block</b>	over 12 columns		over 24 columns	over 12 columns	–	–
<b>Gradient range</b>	1–20 °C	1–24 °C	1–20 °C	1–20 °C	–	–
<b>Gradient temperature range</b>	30–99 °C			30–99 °C	–	–
<b>Lid temperature range</b>	37–110 °C			37–110 °C		
<b>Lid descent and closing pressure</b>	vapo.protect™ technology with Thermal Sample Protection			flexlid® technology with Thermal Sample Protection		
<b>Block homogeneity: 20 °C–72 °C 95 °C</b>	≤ ±0.3 °C ≤ ±0.4 °C			≤ ±0.3 °C ≤ ±0.4 °C		
<b>Block temperature accuracy</b>	± 0.2 °C			± 0.2 °C		
<b>Heating rate*</b>	ca. 4 °C/s	ca. 6 °C/s	ca. 4 °C/s	ca. 3 °C/s		
<b>Cooling rate*</b>	ca. 3 °C/s	ca. 4,5 °C/s	ca. 3 °C/s	ca. 2 °C/s		
<b>Interfaces</b>	Centronics, USB, CAN in, CAN out			USB, Ethernet, CAN in, CAN out		CAN in, CAN out
<b>Dimensions (W × D × H)</b>	26 × 41.5 × 37 cm			25 × 41.2 × 32.1 cm		
<b>Weight</b>	18.5 kg (40.8 lbs)			11 kg (24.2 lbs)		10.5 kg (23.1 lbs)
<b>Power supply</b>	230 V, 50–60 Hz			230 V, 50–60 Hz		
<b>Max. power consumption</b>	950 W			700 W		
<b>Sound power levels</b>	≤ 56 dB(A)			< 40 dB(A)		

\* Heating and cooling rates measured at block  
 \*\*Unit can only be operated via a Mastercycler nexus unit (including flat, X1 versions) with control and display panel  
 Product appearance and/or specifications are subject to change without notice.

Mastercycler® nexus gradient eco***	Mastercycler® nexus flat	Mastercycler® nexus flat eco***	Mastercycler® nexus GSX1	Mastercycler® nexus SX1	Mastercycler® nexus GSX1e***	Mastercycler® nexus SX1e***
						
Aluminum	Aluminum	Aluminum	Silver	Silver	Silver	Silver
96 × 0.2 mL PCR tubes or 1 × 96-well PCR plate or up to 71 × 0.5 mL PCR tubes	4 slides or equivalent		96 × 0.2 ml PCR tubes or 1 × 96-well PCR plate			
	4–99°C		4–99°C			
	Fast, Standard, Safe			Fast, Standard, Safe		
	Peltier elements, Triple Circuit Technology			Peltier elements, Triple Circuit Technology		
over 12 columns	–	–	over 12 columns	–	over 12 columns	–
1–20 °C	–	–	1–20 °C	–	1–20 °C	–
30–99 °C	–	–	30–99 °C	–	30–99 °C	–
	37–110 °C		37–110 °C			
	flexlid® technology with Thermal Sample Protection			flexlid® technology with Thermal Sample Protection		
	≤ ±0.3 °C ≤ ±0.4 °C		≤ ±0.3 °C ≤ ±0.4 °C		≤ ±0.3 °C ≤ ±0.4 °C	
	± 0.2 °C		± 0.2 °C		± 0.2 °C	
	ca. 3 °C/s		ca. 5 °C/s			
	ca. 2 °C/s		ca. 3.5 °C/s			
CAN in, CAN out	USB, Ethernet, CAN in, CAN out	CAN in, CAN out	USB, Ethernet, CAN in, CAN out		CAN in, CAN out	
	25 × 41.2 × 32.1 cm		25 × 41.2 × 32.1 cm			
10.5 kg (23.1 lbs)	11 kg (24.2 lbs)	10.5 kg (23.1 lbs)	11.2 kg (24.7 lbs)		10.7 kg (23.6 lbs)	
	230 V, 50–60 Hz		230 V, 50–60 Hz			
	700 W		540 W			
	≤ 40 dB(A)		≤ 40 dB(A)			

G: Gradient block  
 S: Silver block  
 e: Eco version, needs to be connected to a Mastercycler nexus with control and display panel

# Quality is timeless



The Mastercycler gradient was Eppendorf's first gradient cycler. Today the gradient function remains critical for many PCR labs.

The next generation Mastercycler pro is still one of the fastest cyclers around. Its vapo.protect™ concept is the latest in evaporation reduction technology.

Eppendorf has now introduced the Mastercycler nexus and Mastercycler nexus X1. E-mail notification, booking schedule, low noise levels and low energy consumption are only a few of the features ...



## 1990

Microcycler: Eppendorf introduces its first thermal cycler using water to heat and cool.



## 1993

Mastercycler 5330: Eppendorf introduces the first Mastercycler based on peltier technology.



## 1997

Mastercycler gradient: one of the first gradient thermal cycler on the market.



## 2003

Mastercycler ep: Fast heating/cooling rates and ultra quiet operation—in a compact design.



## 2005

Mastercycler ep *realplex*: Extremely fast optics for rapid data acquisition.



## 2008

Mastercycler pro: New *vapo.protect™* technology reduces evaporation.



## 2012

Mastercycler nexus: Low noise, low energy consumption, e-mail notification



## 2013

Mastercycler nexus X1: Speed, low energy consumption, low noise and e-mail notification

Ordering information	International Order no.	North America Order no.
<b>Mastercycler® nexus with silver block</b>		
Mastercycler® nexus GSX1	6345 000.010	6345000028
Mastercycler® nexus SX1	6346 000.013	6346000021
Mastercycler® nexus GSX1e*	6347 000.017	6347000025
Mastercycler® nexus SX1e*	6348 000.010	6348000029
<b>Mastercycler® nexus with universal block</b>		
Mastercycler® nexus gradient	6331 000.017	6331000025
Mastercycler® nexus	6333 000.014	6333000022
Mastercycler® nexus gradient eco*	6334 000.018	6334000026
Mastercycler® nexus eco*	6332 000.010	6332000029
<b>Mastercycler® nexus with flat block</b>		
Mastercycler® nexus flat	6335 000.011	6335000020
Mastercycler® nexus flat eco*	6330 000.013	6330000021
<b>Complete Mastercycler® pro packages</b>		
Mastercycler® pro and Control Panel	6321 000.515	950040015
Mastercycler® pro S and Control Panel	6325 000.510	950040025
Mastercycler® pro 384 and Control Panel	6324 000.516	950040035
<b>Individual Mastercycler® pro modules</b>		
Control Panel, incl. connection cable	6320 000.007	950030050
Mastercycler® pro**	6321 000.019	950030010
Mastercycler® pro S**	6325 000.013	950030020
Mastercycler® pro 384**	6324 000.010	950030030
<b>Accessories</b>		
CAN_BUS connection cable, 50 cm	5341 612.006	950014008
CAN_BUS connection cable, 150 cm	5341 611.000	950014016
Self test dongle	6320 071.001	950030040
Temperature Verification System with 96 well sensor plate	6328 000.006	6328000006
Temperature Verification System with 384 well sensor plate	6328 000.014	6328000014
CycleManager pro, incl. installation manual, online help, and connection cable	5349 810.001	950017007
CycleManager pro, incl. installation manual, online help	5349 820.007	950017202

\* To run a Mastercycler nexus with the suffix »eco« or »e«, a Mastercycler nexus model without such a suffix is needed. Up to 2 units with the suffix »eco« or »e« can be connected to a Mastercycler nexus without such a suffix.  
\*\* A Control Panel or CycleManager pro software (both sold separately) is required for operation. CAN\_Bus connection cables are required to link cyclers together as a network.

> to be continued ...



### Frost & Sullivan European PCR Instrumentation Green Excellence Award 2012

»Based on its recent analysis of the PCR instrumentation market, Frost & Sullivan recognizes Eppendorf with the 2012 European Green Excellence Award for its Mastercycler nexus. This eco-friendly instrument offers exceptional power-saving capability, e.g. by a standby feature and the amount of power consumed overall.«

<b>Ordering information</b>	<b>International Order no.</b>	<b>North America Order no.</b>
<b>0.1 mL Eppendorf PCR Tubes</b>		
PCR Tube Strips 0.1 mL, without caps (10 × 12 pieces)	0030 124.804	0030124804
PCR Tube Strips 0.1 mL + Cap Strips, domed (10 × 12 pieces each)	0030 124.812	0030124812
PCR Tube Strips 0.1 mL + Cap Strips, flat (10 × 12 pieces each)	0030 124.820	0030124820
<b>0.2 mL Eppendorf PCR Tubes</b>		
0.2 mL PCR Tubes, thinwalled with hinged lid (1000 tubes)	0030 124.332	951010006
8tube strip, for 0.2 mL PCR Tubes (10 × 12 pieces)	0030 124.359	951010022
<b>0.5 mL Eppendorf PCR Tubes</b>		
0.5 mL PCR Tubes, thinwalled with lid (500 tubes)	0030 124.537	0030124537
<b>Cap Strips, Racks, Films &amp; Foils</b>		
Cap Strips, domed (10 × 12 pieces)	0030 124.839	0030124839
Cap Strips, flat (10 × 12 pieces)	0030 124.847	0030124847
PCR Rack, 10 pcs.	0030 124.545	0030124545
Heat Sealing Film, 100 pcs.	0030 127.838	0030127838
Heat Sealing Foil, 100 pcs.	0030 127.854	0030127854
PCR Film (adhesive), 100 pcs.	0030 127.781	0030127781
PCR Foil (adhesive), 100 pcs.	0030 127.790	0030127790
<b>twin.tec PCR Plates</b>		
Eppendorf twin.tec® PCR Plate 96, skirted, clear 25 pcs.	0030 128.648	951020401
Eppendorf twin.tec® PCR Plate 96, semi-skirted, clear 25 pcs.	0030 128.575	951020303
Eppendorf twin.tec® PCR Plate 96, unskirted low profile, clear 20 pcs.	0030 133.307	0030133307
Eppendorf twin.tec® PCR Plate 96, unskirted low profile, clear (divisible) 20 pcs.	0030 133.358	0030133358
Eppendorf twin.tec® PCR Plate 96, unskirted (250 µL), clear, 20 pcs.	0030 133.366	0030133366
Eppendorf twin.tec® PCR Plate 96, unskirted (250 µL), clear (divisible) 20 pcs.	0030 133.374	0030133374
Eppendorf twin.tec® PCR Plate 384, clear, 25 pcs.	0030 128.508	951020702
Eppendorf twin.tec® microbiology PCR Plate 96, skirted, clear, 10 pcs.	0030 129.300	0030129300
Eppendorf twin.tec® microbiology PCR Plate 96, semi-skirted, clear, 10 pcs.	0030 129.326	0030129326
Eppendorf twin.tec® microbiology PCR Plate 384, clear, 10 pcs.	0030 129.342	0030129342

For order numbers of additional twin.tec PCR Plates, please visit [www.eppendorf.com/pcr](http://www.eppendorf.com/pcr)

**Your local distributor: [www.eppendorf.com/contact](http://www.eppendorf.com/contact)**

Eppendorf AG · 22331 Hamburg · Germany  
[eppendorf@eppendorf.com](mailto:eppendorf@eppendorf.com) · [www.eppendorf.com](http://www.eppendorf.com)

[www.eppendorf.com/mastercycler](http://www.eppendorf.com/mastercycler)