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Eppendorf – In touch with life[®]



Mastercycler nexus X1

Mastercycler nexus flat

Product presentation for Customers
Hamburg, December 2012

Product presentation - Mastercycler nexus

LEGAL NOTICE

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Technical specifications subject to change.

- > Overview of Mastercycler nexus family
- > Mastercycler nexus SX1 / GSX1 / SX1e / GSX1e
- > Mastercycler nexus flat
- > Fields of application
- > Support and sales tools

Agenda

- > **Overview of Mastercycler nexus family**
- > Mastercycler nexus SX1 / GSX1 / SX1e / GSX1e
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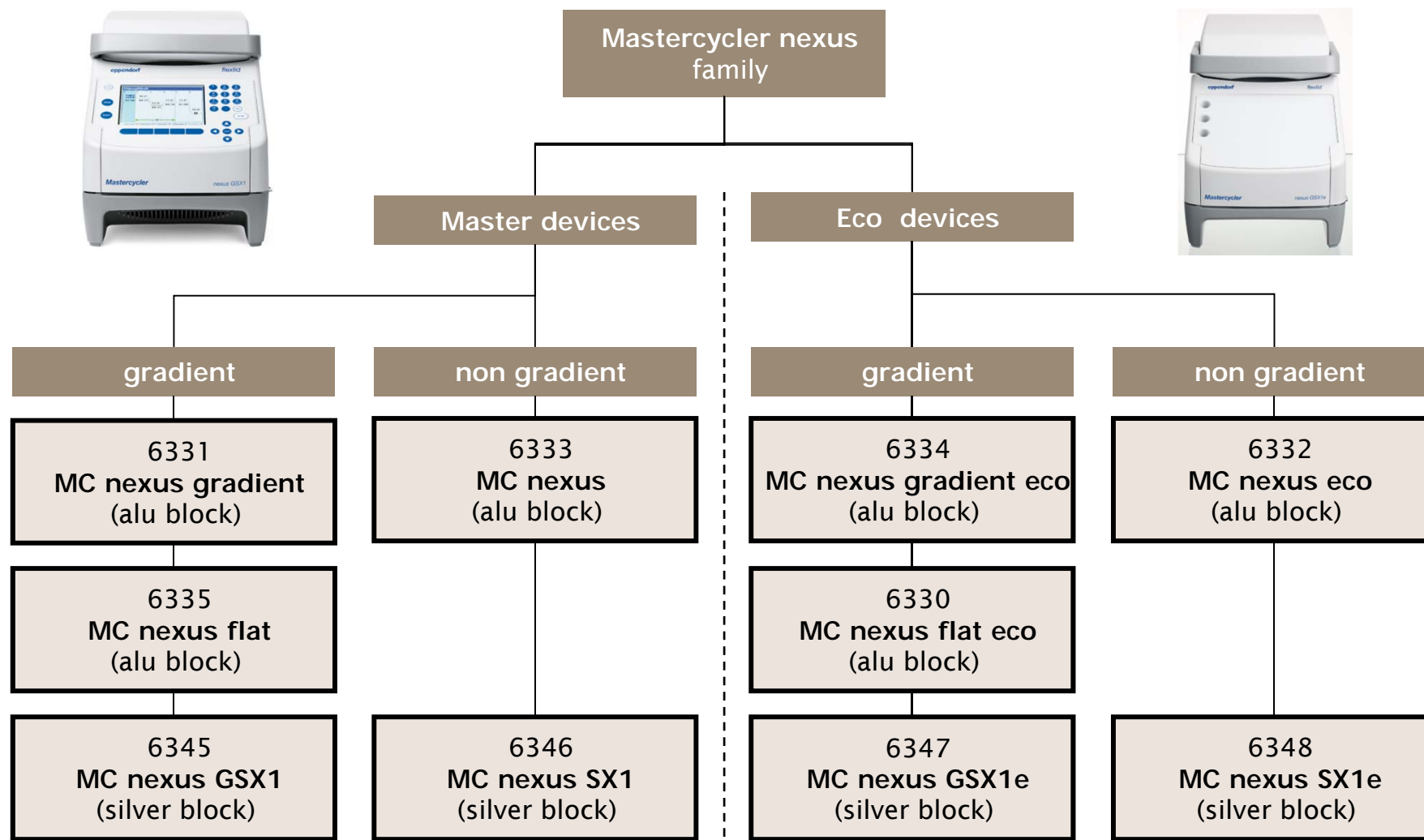
Mastercycler nexus family

- > **Launch in December 2011**
 - > Mastercycler nexus
 - > Mastercycler nexus gradient
 - > Mastercycler nexus eco

- > **Launch in December 2012**
 - > Mastercycler nexus SX1
 - > Mastercycler nexus GSX1
 - > Mastercycler nexus SX1e
 - > Mastercycler nexus GSX1e
 - > Mastercycler nexus flat
 - > Mastercycler nexus flat eco
 - > Mastercycler nexus gradient eco



> From now on: 10 Mastercycler nexus devices!



Mastercycler nexus models

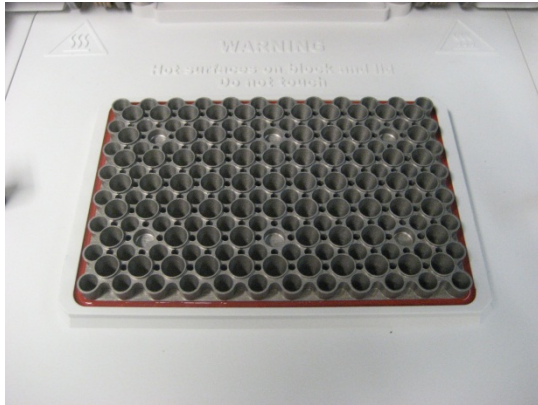
	Silver Block		Universal Block		Flat
	gradient	non-gradient	gradient	non-gradient	(gradient)
Control Unit	x	x	x	x	x
Eco Unit	x	x	x	x	x

x = new

Block variants



Block variants



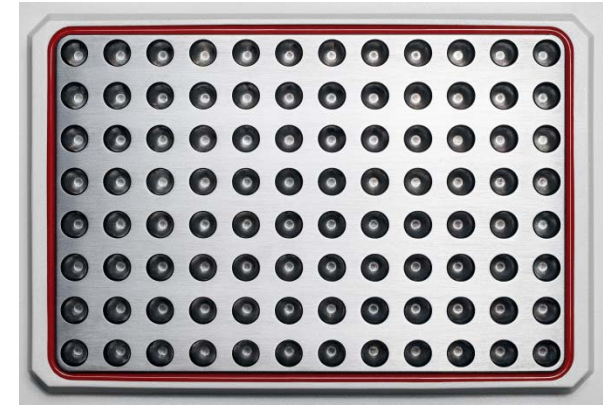
96/71 well aluminum block

- > Universal block:
 - > 96 x 0.1/0.2 mL
 - > up to 71 x 0.5 mL
- > ca. 3 °C ramping



flat aluminum block

- > Up to 4 slides
- > ca. 3°C ramping



96 well silver block

- > 96 x 0.1/0.2 mL
- > ca. 5 °C ramping

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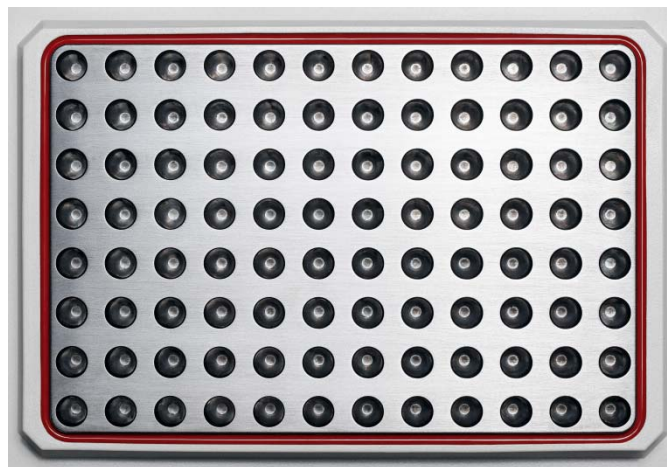
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Product profile

The Mastercycler nexus X1 is the most modern standard PCR instrument. Today's hot topics like software convenience, lack of time and responsible use of natural resources are addressed to an unrivalled extent.

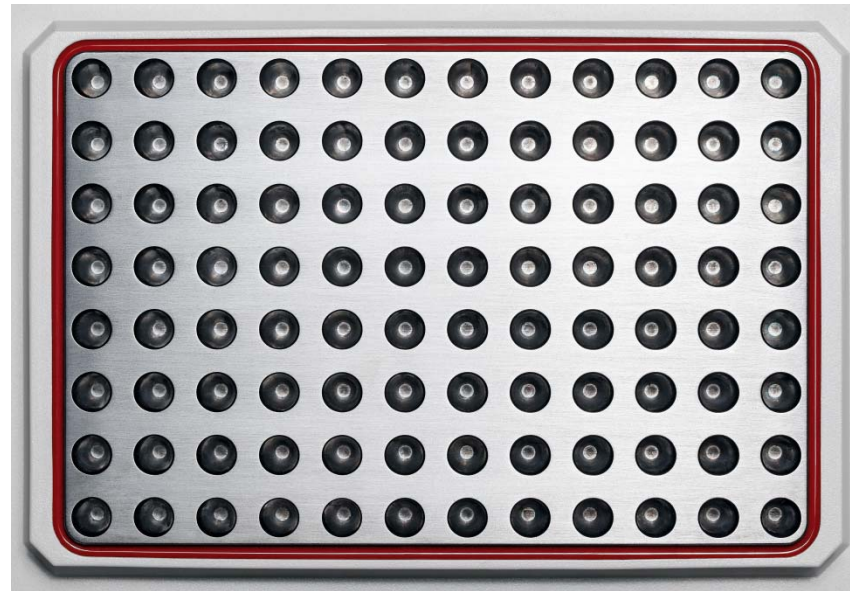
Mastercycler nexus with silver block

- > Mastercycler nexus SX1 → 96 well silver block without gradient
- > Mastercycler nexus GSX1 → 96 well silver block with gradient
- > Mastercycler nexus SX1e → eco variant, 96 well silver block without gradient
- > Mastercycler nexus GSX1e → eco variant, 96 well silver block with gradient



Main feature: Speed

> max. ramping: 5°C/s



Application Note

eppendorf

APPLICATION NOTE

Comparative run time evaluations of PCR thermal cyclers

Nils Gerke, Eppendorf AG, Hamburg, Germany

Abstract

For the purpose of comparing different thermocyclers, the isolated consideration of ramp rates cited in the technical specifications often does not achieve significant meaningfulness. An estimate of actual run times based on these technical ramp

Whereas the Mastercycler pro S and the Mastercycler nexus GSX1, as expected from their fast ramp rates, achieved the shortest total PCR run times, some thermocyclers made by other manufacturers showed noticeably slower run times despite similar cited

Main features

- > Speed: Heating rates of 5 degrees C/s will bring the run times close to the Mastercycler pro
- > Energy efficiency: The reduced mass of the silver block will reduce the energy consumption even further.
- > Compatibility: All X1 units are fully compatible with the existing Mastercycler nexus units and can be combined
- > Block: The silver block is not a universal block, it can not accomodate 0.5 mL PCR tubes

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Agenda

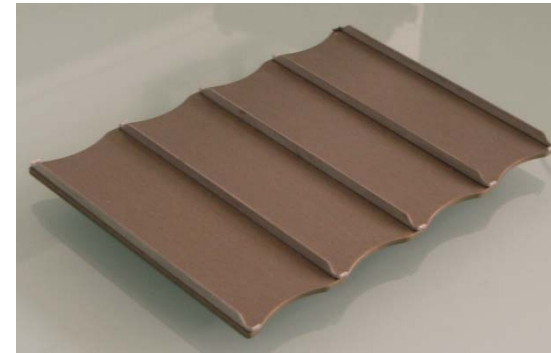
Product profile

The Mastercycler nexus flat is best suited for *in situ* PCR. The direct heat transfer without an adapter allow much more controlled and reproducible PCR runs. In the future, additional special consumables will benefit from the flat block geometry.

previous situation: Mastercycler + in situ adapter

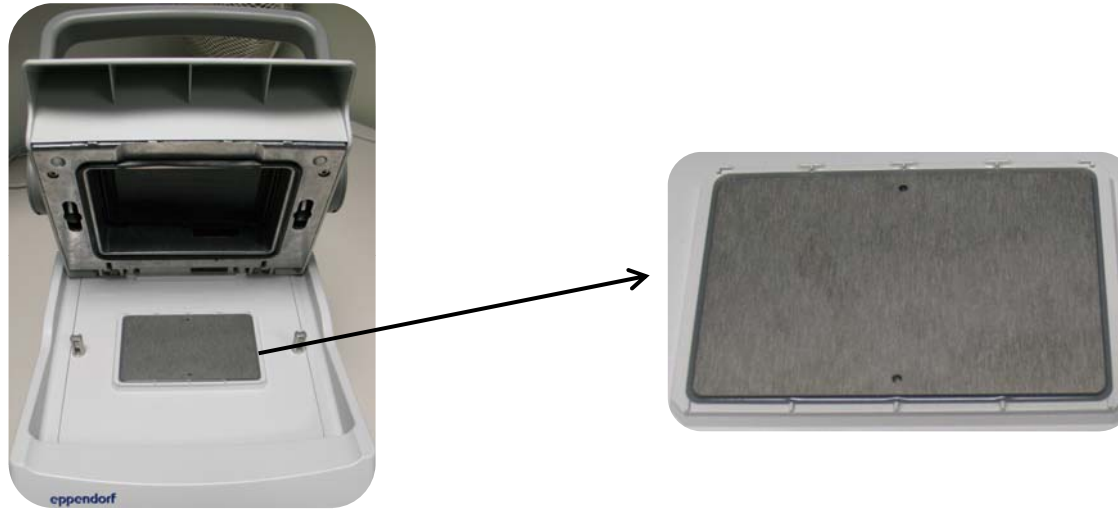


+



- > Established and robust, but old fashioned
- > Indirect temperature transfer through an adapter
- > **An adapter is a compromise**

Mastercycler nexus flat – No Compromise!!!



- > Up to 4 slides, e.g. for *in situ* PCR
- > Flat block - direct temperature transfer:
- > **No adapter → no compromise**

Application Note – *in situ* PCR

APPLICATION NOTE No. 249 | December 2012

Imaging of single cell gene expression
via *in situ* RT-PCR on the Mastercycler®
nexus flat

Anne Jörns
Institute of Clinical Biochemistry, Hannover Medical School, Hannover, Germany; joerns.anne@mh-hannover.de

Abstract

In situ RT-PCR is a useful tool to detect cell types in tissue sections. Results obtained from protein expression

In this Application Note it is demonstrated how *in situ* RT-PCR performance on the Mastercycler nexus flat

- > **Better signal to noise ratio of the images**
- > **Shorter run time: ca. 2 h faster on the Mastercycler nexus flat**

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Applications

The high quality performance and flexibility of the Mastercycler nexus enable to perform a multiplicity of PCR methods and applications:

- > Multiplex PCR (genetic fingerprint, lineage investigations,...)
- > Touchdown PCR
- > Nested PCR (detection of low template copy no.)
- > RAPD PCR (Gene typing, phylogenetics)
- > RT PCR (Gene expression studies)
- > Cycle Sequencing
- > TAIL PCR
- > *in situ* PCR
- > Etc.

Laboratories

The versatile use of the Mastercycler nexus make it suitable for a broad variety of user groups, including:

- > Academic Research labs
- > Industrial Research Labs
- > Food & Agriculture Labs
- > Forensic Labs
- > Etc.

Mastercycler nexus family . . .

- > covers almost all conventional PCR applications
- > PCR users who are performing...



- > **routine** PCR applications
- > **advanced** PCR applications
- > **special** PCR applications

Long term PCR experience

A history of advanced PCR



→ 2012: Mastercycler nexus

- > Further development based on Eppendorf's long-time PCR experience
- > Eppendorf is a PCR system provider

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Mastercycler Support

Eppendorf Application Hotline

Phone: + 49 1 803-666 789 (Hamburg-based Application Hotline, Germany)

E-mail: support@eppendorf.com (Europe, International)

support_na@eppendorf.com (Eppendorf North America)

support_asiapacific@eppendorf.com (Eppendorf Asia Pacific)

Homepage: www.eppendorf.com

+ www.mastercycler.com

Manuals

Applications

FAQs

Tips & Tricks

PCR Calculator



Application Notes

APPLICATION NOTE No. 249 | December 2012

Imaging of single cells via *in situ* RT-PCR on the Mastercycler nexus flat

Anne Jörns
Institute of Clinical Biochemistry, Hannover Medical School, Hannover, Germany

Abstract

In situ RT-PCR is a useful tool to detect cell types in tissue sections. Results obtained from protein expression analysis can be correlated with the results of RT-PCR. In this Application Note it is demonstrated how *in situ* RT-PCR performance on the Mastercycler nexus flat

APPLICATION NOTE




Comparative run time evaluations of PCR thermal cyclers

Nils Gerke, Eppendorf AG, Hamburg, Germany

Abstract

For the purpose of comparing different thermocyclers, the isolated consideration of ramp rates cited in the technical specifications often does not achieve significant meaningfulness. An estimate of actual run times based on these technical ramp rates was calculated. Whereas the Mastercycler pro S and the Mastercycler nexus GSX1, as expected from their fast ramp rates, achieved the shortest total PCR run times, some thermocyclers made by other manufacturers showed noticeably slower run times despite similar cited

Brochure

Technical Specifications	Mastercycler pro	Mastercycler pro 5	Mastercycler pro 36
			
Thermoblock	Aluminum	Silver	Aluminum
Sample Capacity	96 x 0.2 ml PCR tubes or 1 x 96-well PCR plate		1 x 384-well PCR plate
Temperature control range of the block		4–99 °C	
Temperature control mode		Fast, Standard, Safe	
Heating technology of the block		Peltier elements, Triple Circuit Technology	
Gradient block	over 12 columns		over 24 columns
Gradient range	1–20 °C	1–24 °C	1–20 °C
Gradient temperature range		30–99 °C	
Lid temperature range		37–110 °C	
Lid descent and closing pressure		vapo-protect® technology with Thermal Sample Protection	
Block homogeneity: 20 °C–72 °C		≤ ±0.3 °C	
95 °C		≤ ±0.4 °C	
Block temperature accuracy		± 0.2 °C	
Heating rate*	ca. 4 °C/s	ca. 6 °C/s	ca. 4 °C/s
Cooling rate*	ca. 3 °C/s	ca. 4.5 °C/s	ca. 3 °C/s
Interfaces	Centronics, USB, CAN in, CAN out		
Dimensions W x D x H	26 x 41.5 x 37 cm		
Weight	18.5 kg (40.8 lbs)		
Power supply	230 V, 50–60 Hz		
Max. power consumption	950 W		
Sound power levels	≤ 56 dB(A)		




* Heating and cooling rates measured at block
 * CAN only for operation as a Mastercycler pro as per including file. If connected with control and display panel
 Product appearance and/or specifications are subject to change without notice.



Amplify

Eppendorf Mastercyclers—best conditions for PCR

Eppendorf Mastercycler Family 12

Mastercycler nexus SX1	Mastercycler nexus GSX1e***	Mastercycler nexus SX1e**
		
Silver	Silver	Silver
x 0.2 ml PCR tubes or 1 x 96-well PCR plate		
4-99°C		
Fast, Standard, Safe		
Peltier elements, Triple Circuit Technology		
—	over 12 columns	—
—	1-20 °C	—
—	30-99 °C	—
37-110 °C		
flexid® technology with Thermal Sample Protection		
≤ ±0.3 °C		
≤ ±0.4 °C		
± 0.2 °C		
ca. 5 °C/s		
ca. 3.5 °C/s		
CAN in, CAN out	CAN in, CAN out	
25 x 41.2 x 32.1 cm		
4.7 lbs	10.7 kg (23.6 lbs)	
230 V, 50-60 Hz		
540 W		
≤ 40 dB(A)		

Eppendorf Mastercycler nexus:
combine, connect, control

Thank you