

## 14 Technical data

### 14.1 Dimensions

Width	275 mm
Depth	430 mm
Height with lid closed	330 mm
Height with lid open	439 mm

### 14.2 Weight

Mastercycler X50	11,5 kg
Mastercycler X50 eco	10,7 kg

### 14.3 Mains/power supply

Mains/power supply voltage	100 V – 240 V ± 10 %
Mains/power frequency	50 Hz – 60 Hz
Power consumption	850 W max.
Overvoltage category	II
Pollution degree	2
Protection class	I
Specifications for mains/power cords in Europe with E/F mains/power plugs	Cable type AC 250 V / 10 A 3G 1 mm <sup>2</sup> with double insulation  Mains/power plug according to IEC CEE-7 / IEC 60884-1 and C13 appliance coupler according to IEC 60320-1
Specifications for mains/power cords in Europe with other mains/power plugs	Use the mains/power cord in accordance with national regulations  Cable type AC 250 V / 10 A 3G 1 mm <sup>2</sup> with C13 appliance coupler according to IEC 60320-1 and with mains/power plug according to national regulations and IEC 60884-1
Specifications for mains/power cords in Canada and the USA	Cable type AC 125 V / 10 A SJT 3x18 AWG with double insulation  Mains/power plug NEMA 5-15 according to ANSI/NEMA WD-6 and C13 appliance coupler according to UL/IEC 60320-1
Specifications for mains/power cords outside Europe, Canada and the USA	Use the mains/power cord in accordance with national regulations

## 14.4 Ambient conditions

### Operation

Environment	For indoor use only. Not a wet environment.
Ambient temperature	15 °C – 35 °C
Relative humidity	75 % maximum
Atmospheric pressure	80 kPa max.

### Transport

Air temperature	-25 °C – 60 °C
Air temperature for air freight	-40 °C – 55 °C
Relative humidity	10 % – 95 %
Atmospheric pressure	30 kPa – 106 kPa

### Storage

Air temperature	-20 °C – 70 °C
Relative humidity	10 % – 95 %

## 14.5 Electromagnetic compatibility

Electromagnetic compatibility	IEC 61326-1, Class B  Class B is the basic electromagnetic environment (environment at locations which are directly supplied with low voltage from the public supply network)
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## 14.6 Interfaces

### Interfaces of the Mastercycler X50

USB	1x 2.0 Type A
Ethernet	<ul style="list-style-type: none"> <li>• 1x RJ-45 plug for connection to the VisioNize Lab Suite (main cyclers)</li> <li>• 1x RJ-45 plug for Cyclers network</li> <li>• Compatibility with IEEE 802.3 Ethernet switch at a data transfer rate of 10/100 MBit/s or 10/100/1000/... MBit/s</li> </ul>

## 14.7 Noise level

The noise level was measured in a method using an enveloped surface with accuracy class 2 (DIN EN ISO 3744) at a distance of 1 m to the device for a sound field that is substantially free of obstacles above a reflective plane.

Idle: continuous idle state	< 31.2 dB(A)
Default PCR execution (temperature control cycle)	< 33.6 dB(A)
Continuous cooling cycle at 4° C	< 47.2 dB(A)

## 14.8 Application parameters

### Mastercycler X50a, Mastercycler X50l (eco)

Thermoblock	Aluminum 96 wells
Sample capacity	<ul style="list-style-type: none"> <li>• 96 × 0.1 mL PCR tubes</li> <li>• 96 × 0.2 mL PCR tubes</li> <li>• 1x 96-well PCR plate (unskirted, semi-skirted, skirted and low-profile)</li> </ul>
Temperature control range of the thermoblock	4 °C – 99 °C
Ramp rate (heating) (measured on the thermoblock)	max. 5 °C/s
Ramp rate (cooling) (measured on the thermoblock)	max. 2.3 °C/s
Temperature homogeneity of the thermoblock (with gradient function switched off) at 20 °C – 72 °C at 72 °C – 95 °C	±0,2 °C ±0,3 °C
Control accuracy (with gradient function switched off)	±0,15 °C
Gradient spread (horizontal and vertical)	30 °C max.
Gradient temperature control range (horizontal and vertical)	30 °C – 99 °C
Heated lid temperature control range	37 °C – 110 °C

### Mastercycler X50h, Mastercycler X50t (eco)

Thermoblock	Aluminum 384 wells
Sample capacity	1x 384-well PCR plate
Temperature control range of the thermoblock	4 °C – 99 °C

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Ramp rate (heating) (measured on the thermoblock)	max. 5 °C/s
Ramp rate (cooling) (measured on the thermoblock)	max. 2.3 °C/s
Temperature homogeneity of the thermoblock (with gradient function switched off) at 20 °C – 72 °C at 72 °C – 95 °C	±0,2 °C ±0,3 °C
Control accuracy (with gradient function switched off)	±0,15 °C
Gradient spread (horizontal and vertical)	30 °C max.
Gradient temperature control range (horizontal and vertical)	30 °C – 99 °C
Heated lid temperature control range	37 °C – 110 °C

**Mastercycler X50s, Mastercycler X50i (eco)**

Thermoblock	Silver 96 wells
Sample capacity	<ul style="list-style-type: none"> <li>• 96 × 0.1 mL PCR tubes</li> <li>• 96 × 0.2 mL PCR tubes</li> <li>• 1x 96-well PCR plate (unskirted, semi-skirted, skirted and low-profile)</li> </ul>
Temperature control range of the thermoblock	4 °C – 99 °C
Ramp rate (heating) (measured on the thermoblock)	max. 10 °C/s
Ramp rate (cooling) (measured on the thermoblock)	max. 5 °C/s
Temperature homogeneity of the thermoblock (with gradient function switched off) at 20 °C – 72 °C at 72 °C – 95 °C	±0,2 °C ±0,3 °C
Control accuracy (with gradient function switched off)	±0,15 °C
Gradient spread (horizontal and vertical)	30 °C max.
Gradient temperature control range (horizontal and vertical)	30 °C – 99 °C
Heated lid temperature control range	37 °C – 110 °C