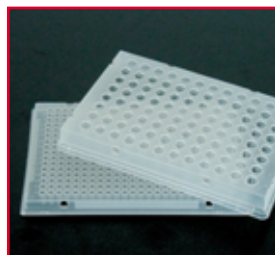
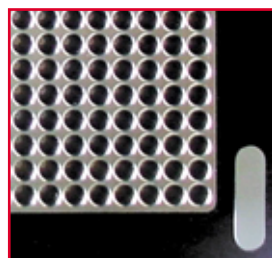
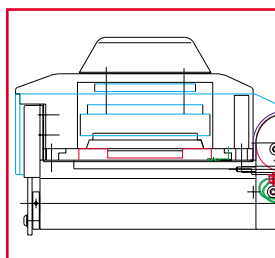
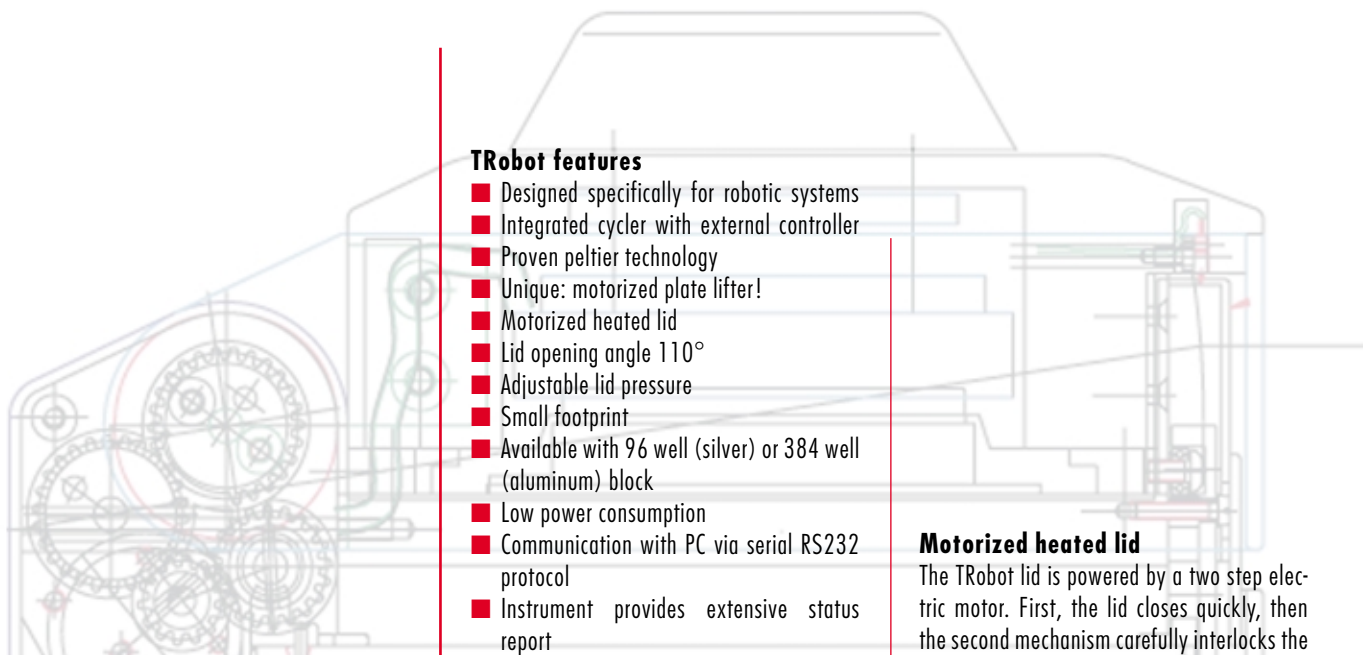


TROBOT Thermocycler

It is time to upgrade
your robotic system



TROBOT Thermocycler – designed



TROBOT features

- Designed specifically for robotic systems
- Integrated cycler with external controller
- Proven peltier technology
- Unique: motorized plate lifter!
- Motorized heated lid
- Lid opening angle 110°
- Adjustable lid pressure
- Small footprint
- Available with 96 well (silver) or 384 well (aluminum) block
- Low power consumption
- Communication with PC via serial RS232 protocol
- Instrument provides extensive status report

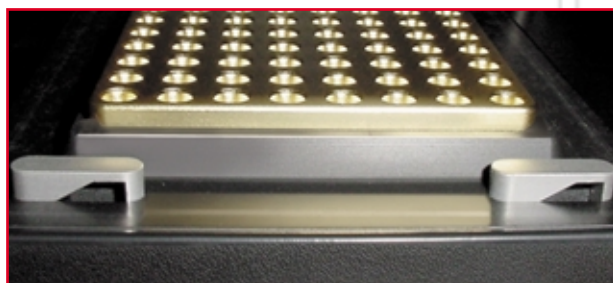
The specialist. For integration in automated environments a thermocycler has to meet very different needs than a bench-top instrument. Since space under the robotic arm is limited, a thermocycler needs a small footprint. To ensure automated workflow, the instrument must have a motorized lid that allows the robotic arm to access the block easily and that is strong enough to reliably seal microplates. All features of the thermocycler have to be controlled via user-friendly software. After cycling, plates need to be easily removed for downstream processing. These specifications were the starting point for the development of the new TROBOT thermocycler.

Small footprint

To produce a compact instrument, the TROBOT block module has been separated from the controller unit. Thus the controller can be placed outside the workstation. By switching the thermocycler chassis, the airflow direction can be inverted (front to back or vice versa). This minimizes contamination due to air flowing towards a liquid handler or other components.

Motorized heated lid

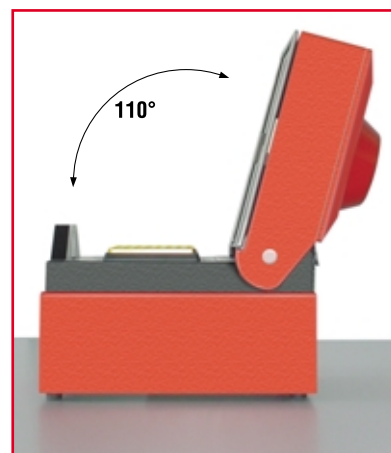
The TROBOT lid is powered by a two step electric motor. First, the lid closes quickly, then the second mechanism carefully interlocks the lid at the front. This ensures that a defined, reproducible pressure is applied. When the lid is closed the electric motor is uncoupled for a long life. The amount of pressure exerted by the lid can be precisely set to one of 15 different positions.



Reliable uniform cycling

The TROBOT thermocycler is available in two different block formats. Taking advantage of the high thermal conductance of silver the TROBOT 96 achieves high ramping rates as well as excellent temperature uniformity. The silver block is coated with gold to ensure lasting performance.

The TROBOT 384 block is made of aluminum and achieves perfect fit for 384 well microplates (050-231). The 384 well block is coated with a special alloy, which supports easy removal of plates by the motorized lifter.



for integration in robotic systems

Motorized plate lifter

Removing plates from the block has been one of the major obstacles to thermocycler automation. Due to the tight fit, air between the block and the plate is displaced during cycling causing microplates to stick. This makes it difficult for the plates to be removed by a robotic arm. To solve this problem the TRobot is equipped with four levers that lift the plate from the block as the lid opens. Once lifted the plate can be easily removed by a robotic arm. The levers then return to their initial position allowing a new plate to be positioned.

Communication with the TRobot

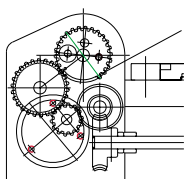
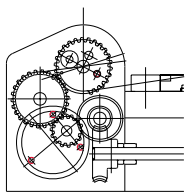
All features of the TRobot are controlled via its serial port. A detailed communication protocol is available. Integration in existing software environments (of individual robotic stations) is very easy. In addition to controlling standard features, the TRobot can provide extensive status messages that allow monitoring of all instrument parameters. A software tool for directly operating the TRobot from a Personal Computer is also available.

Internal memory

The TRobot provides an internal memory organized in 10 subdirectories. Programs can be started either by downloading the protocol prior to starting this program. Alternatively, an existing program can be started from the internal memory of the TRobot.

Low power consumption

The TRobot provides economic power management. Due to the low power consumption the TRobot achieves quiet operation and low heat emission. This is especially important when several instruments are used in parallel for high sample throughput.



Biometra[®]

Technical Specifications

Order Information

	TRobot 96	TRobot 384
Thermocycler	Remote thermocycler with motorized heated lid	Remote thermocycler with motorized heated lid
Capacity	96 well microplate	384 well microplate
Block	96 well gold plated silver block	384 well aluminum block, special coating
Max. heating	3.5 °C/sec	1.0 °C/sec
Max. cooling	2.5 °C/sec	1.0 °C/sec
Temperature range	-3.0 – 99.9 °C	-3.0 – 99.9 °C
Temperature uniformity	± 0.5 °C	± 0.5 °C
Control accuracy	± 0.1 °C	± 0.1 °C
Heated Lid		
Temperature range	30 – 110 °C	30 – 110 °C
Pressure range	0 – 10 kg/plate, adjustable in 15 increments	0 – 10 kg/plate, adjustable in 15 increments
Max. opening angle	110°	110°
Two step electric motor	Yes	Yes
Front locking mechanism	Yes	Yes
Motorized plate lifter	Yes	Yes
Thermocycler dimensions		
Footprint (W x L)	168 x 226mm	168 x 226 mm
Height (lid closed)	195mm	195mm
Height (lid opened)	306mm	306mm
Weight	7 kg	7 kg
Interface	37 pin (controller), 10 pin (power)	37 pin (controller), 10 pin (power)
Controller		
Input voltage	100, 115, 230 Volt	100, 115, 230 Volt
Maximum power consumption	350 Watt	350 Watt
Interface	37 pin (controller), 10 pin (power) serial RS232	37 pin (controller), 10 pin (power) serial RS 232
Dimensions (W x L x H)	190 x 440 x 125 mm	190 x 440 x 125 mm
Weight	5.9 kg	5.9 kg

Order information	Order number
TRobot 96 Thermocycler	050-991
Thermocycler with motorized heated lid, external controller, 2 connecting cables (3 m), software for operating up to 8 TRobots from a computer, communication protocol for integration in robotic environments, documentation	
TRobot 384 Thermocycler	050-992
Thermocycler with motorized heated lid, external controller, 2 connecting cables (3 m), software for operating up to 8 TRobots from a computer, communication protocol for integration in robotic environments, documentation	

Recommended plastic ware	Order number
96 well plates, skirted	050-232
384 well plates, skirted	050-231