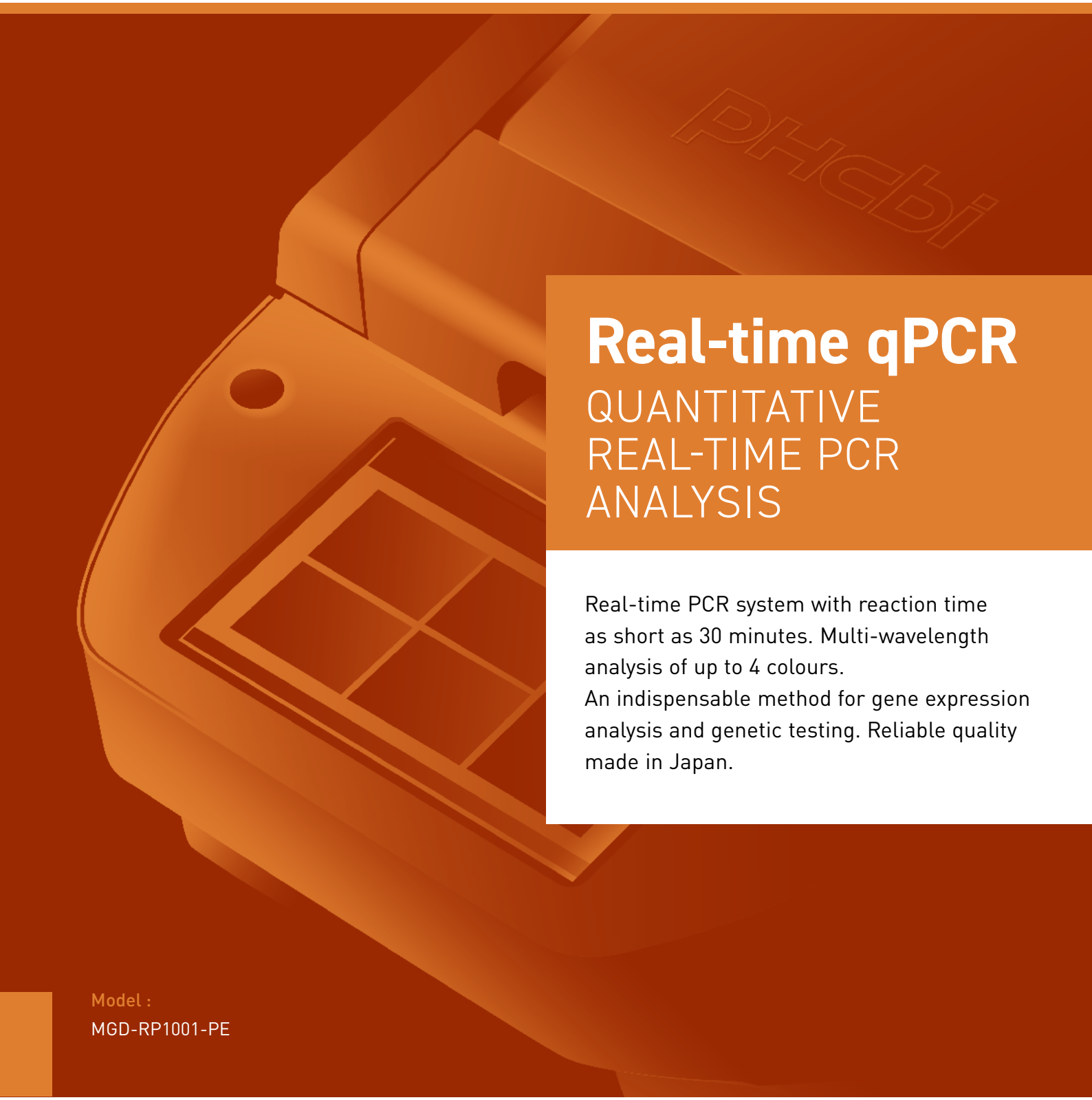
PHCbi



Real-time qPCR

QUANTITATIVE REAL-TIME PCR ANALYSIS

Real-time PCR system with reaction time as short as 30 minutes. Multi-wavelength analysis of up to 4 colours.
An indispensable method for gene expression analysis and genetic testing. Reliable quality made in Japan.

Model :
MGD-RP1001-PE

PHC Europe
A Member of PHC Group

www.phchd.com/eu/biomedical

Real-time PCR analysis

MGD-RP1001-PE. Real-time PCR, which offer high quantitation, reproducibility, and speed, is an indispensable method for gene expression analysis and genetic testing.

Features:

- Real-time PCR system with reaction time **as short as 30 minutes**
- **Excellent performance** with 2 step & 3 step PCR
- **Fast PCR kit compatible/2 step PCR optimized** with preset and flexible running protocols
- **Exhaustive analysis software** for beginners & advanced users
- 2 year warranty

High-performance hardware enables **high-precision real-time** PCR analysis!

PRECISE TEMPERATURE CONTROL AND FAST OPTICAL SYSTEM

The heating and cooling system of the PHCbi real-time PCR uses a Peltier element with highly accurate temperature regulation in all 96 wells. In addition, the imaging system avoids delay in measurement by detecting all 96 wells simultaneously. As a result, high uniformity and reproducibility are achieved between wells and between experiments.

SET OF 4 FLUORESCENCE FILTERS PROVIDE FLEXIBILITY BETWEEN SINGLE COLOUR PROTOCOLS OR MULTIPLEXING METHODS

The PHCbi real-time PCR is standard equipped with four types of fluorescence filter (FAM, HEX, ROX, and Cy5), enabling real-time PCR with SYBR® green detection (or similar dyes) and detection with various fluorescence-labeled probes. If ROX is not used for correction, it can also be effectively used as a detection wavelength.

IMPROVED EASE OF USE

Stand-alone control of the device eliminates the need for a PC and saves space. This saves space on the laboratory bench, which tends to be cramped.

LAN CONNECTION TO ANALYSIS PC

If desired, a PC for data analysis can be connected via LAN cable. Data can be shared via intranet from a connected analysis PC.

2-YEAR WARRANTY FOR PEACE OF MIND

The PHCbi real-time PCR comes as standard with a two-year product warranty from delivery.

PHCbi real-time PCR is **packed with useful features**

PHCbi real-time PCR can be operated as a stand-alone unit

OPERATION AND ANALYSIS USING PC

The PHCbi real-time PCR system software for PC has a user interface designed to be intuitive and easy to operate, even for first-time users, from set up to analysis.

- Experimental setup: analysis types can be selected from absolute quantification, relative quantification, +/- decision, and SNP genotyping. The analysis type can be changed as needed even after the run is completed;
- Sample setting: to make sample information setting more intuitive, we continue to adopt a setting method based on a list management of target samples. It realizes systematic plate sample information setting and is very convenient when handling multiple speciments;
- Reaction condition setting: pull-down selection allows easy setup of experimental conditions. Direct recall from previous run files is possible;
- Results/Analysis: the divided Result/Analysis screen allows to simultaneously analyze an experiment from two different perspectives;
- Output setting: various text files for creating RDML files can be output with simple operations;

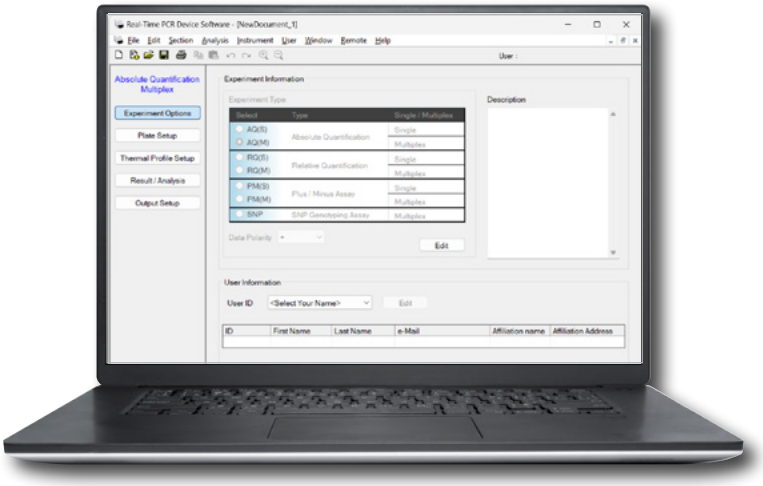
EASY OPERATION FUNCTION

Create a new file using a previous file as a template directly from the initial screen. Previous measurement conditions can be extracted without modification, which shortens setup time and reduces setting errors.

ENHANCED REPORTING FUNCTIONS

Various output formats are supported by the PC Analysis software, allowing reports to be created in a file format that suits your purpose (such as CSV, Excel, Word, PDF, PowerPoint).

Intuitive
PHCbi real-time PCR Analysis



SUITABLE FOR A WIDE RANGE OF APPLICATIONS. In response to the needs of researchers, we support a variety of analysis methods.

- **Ct value (Threshold Cycle) calculation methods**

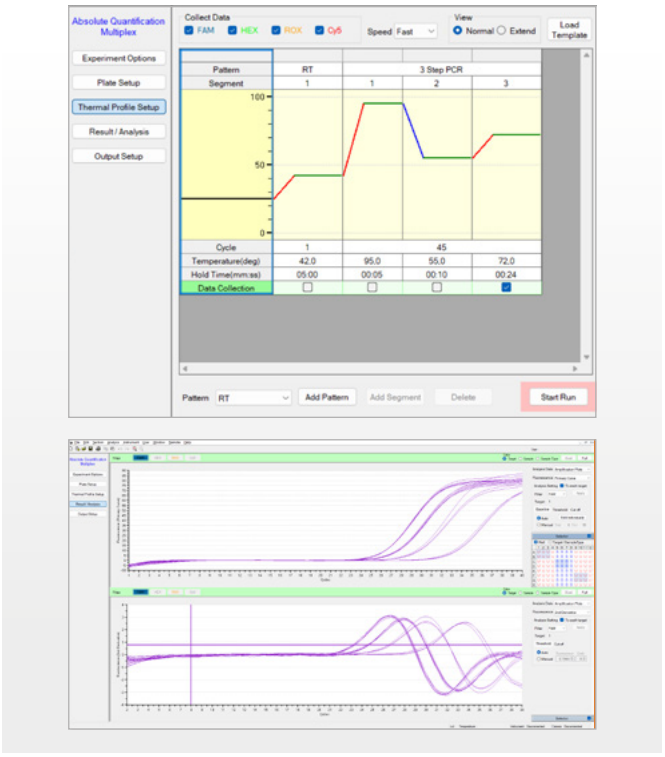
Crossing point (Cp) method: This is a method of calculating the Ct value from the intersection of the amplification curve (Primary Curve) and the threshold (Threshold). The Ct value fluctuates depending on the threshold setting.

2nd Derivative maximum method: This method uses the number of cycles in which the rate of change in amplification rate is the maximum value as the Ct value, and is not affected by detection error, so there is no need to correct the fluorescence value between wells. In addition, unlike the Cp method, the Ct value does not fluctuate depending on the threshold setting, so reproducibility between experiments is high.

- **Quantitative Analysis: Absolute Quantification, Relative Quantification**

Calibration curve display: The calibration curve method is used for both absolute and relative quantitation. The calibration curve displays the PCR amplification efficiency and the coefficient of determination (the squared value of the correlation coefficient) and serves as an indicator to determine the reliability of the assay.

Display of relative quantification results: Relative quantification analysis is performed using the calibration curve method or the ΔΔCt (comparative Ct) method, and the results are displayed as a bar graph with the control sample as 1.



- **Qualitative Analysis: SNP Genotyping Assay, +/- Judgment (Plus/Minus Assay)**

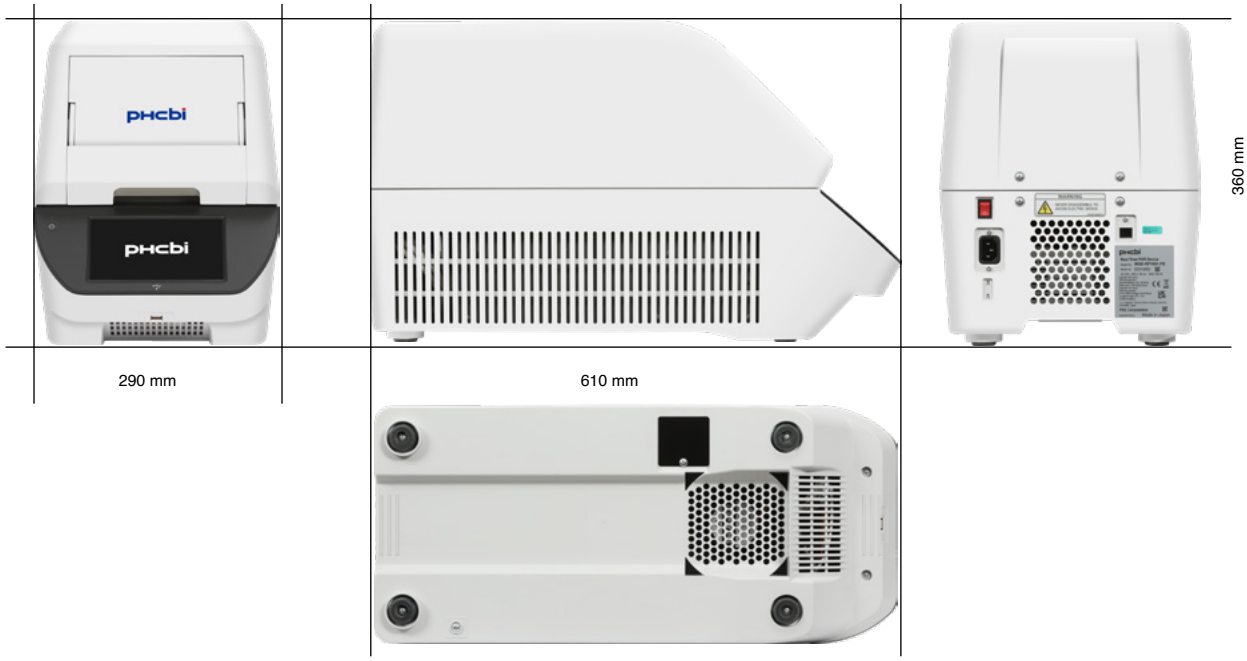
Measurement distribution: Displays the distribution of measurements as a Scatter Plot. It's great for capturing the results visually.

Judgment result: The detection results of each filter are comprehensively judged and automatically judged by +/- or genotype. You can also see at a glance the success or failure of the control response and the possibility of false negatives.

USB drive

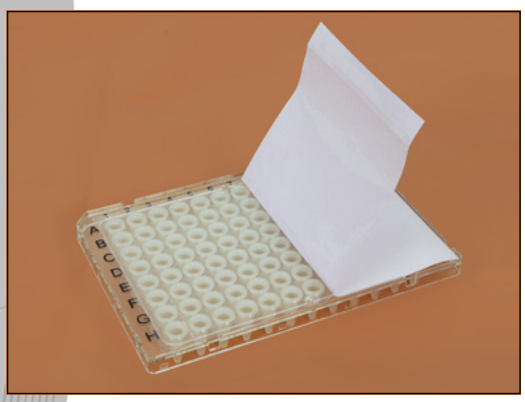
Real-Time PCR Device		
Model Number		MGD-RP1001-PE
External dimensions (W x D x H)	mm	Product: body 290 x 610 x 360
Weight	kg	17.5 (body) / 18.5 (with accessories)
Reaction plate/tube		0.1 ml 96-well plate / 0.1 ml 8-tube strip
Reactor block		Aluminum
Optical detection system		CMOS camera (1440 pix X 1080 pix) Detectable wavelength 380~730nm
Optical filters		Standard-equipment filters: FAM/HEX/ROX/Cy5 All 4 filters can be used simultaneously
Filter change system		Electric filter wheel
Light source		White CoB LED, Excitable wavelength:440~700nm
Heating and cooling		Peltier element
Safety system		Lid heater: Temperature fuse Internal protection: Reactor block and Built-in heat sink overheat protection circuit Power source: Circuit protector
Touch panel		7 inch LCD touch panel
Rate power voltage	V	AC220~240 / 50 Hz
Maximum power	W	750 (max value during PCR cycle)
Battery for clock		Lithium battery 3V (for board PC)
Reaction liquid volume		recommended volume 25 μℓ, Max. 50 μℓ
Sample		Max. 96 sample
PC connection		Ethernet (wired LAN)
Built in OS		Windows 10 IoT Enterprise
Accessory		• Operating instructions • LAN cable: Category 5e, 2 m • Power cable (EU-type plug): 3 m, with 250 V-10 A rating • Power cable (UK-type plug): 3 m, with 250 V-10 A rating • Software in USB flash drive: (Content: Analysis software, analysis software manual (PDF), LCD software manual (PDF), product manual (PDF)

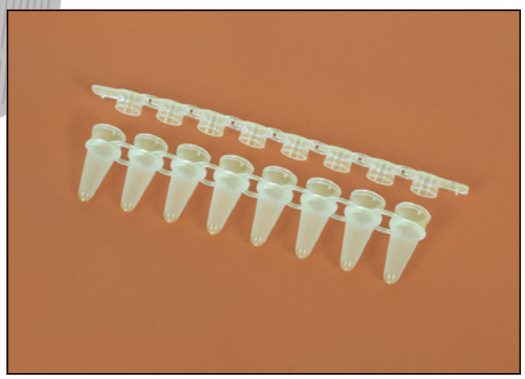
dimensions



	Real-Time PCR Device
Control specifications	
Temp. display	Lid temperature. (increment of 0.1˚C), Block temperature (increment of 0.1˚C)
Set temperature range	10.0~99.9˚C (increment of 0.1˚C)
Run mode	Fast mode / Normal mode
Dissociation curve analysis	0.5°C step
Lid heating	When the set temperature is 20°C or higher, the lid temperature will be kept at approximately 108°C. When the set temperature is below 20°C, the lid temperature will be kept at approximately 40°C.
Lid lock	During Run mode, locking with electric lock. When Run mode stopped, unlocking. If run paused or canceled, it will be unlocked.
Self-diagnosis function	Sensor open circuit, short circuit, fan lock, block temperature error, lid temperature error, heating and cooling rate errors
Thermal control	PID control
Calibration	Optical system: by standard reagent for calibration, Temperature: by thermocouple
Operating environment	Ambient temperature: 15°C to 30°C, Humidity: 20~80%RH
Temperature rise/fall performance	Temperature rise speed : 4.3°C/sec or greater Temperature fall speed : 4.1°C/sec or greater Average speed of block temperature between 60°C and 90°C
Highest heating and cooling rates	Highest heating rate: 5.9°C/second or greater Highest cooling rate: 4.9°C/second or greater Max. and Min. change temperature of block temperature between 60°C and 90°C
Overshoot	94°C overshoot 0.5°C or less
Undershoot	55°C undershoot 0.5°C or less
Temperature accuracy	At a set temperature of 94.0°C, 94.0°C ±0.5°C (Liquid temperature) At a set temperature of 55°C, 55°C ±0.5°C (Liquid temperature)
Temperature uniformity	At a set temperature of 94°C, difference between the highest and the lowest is within 1.0°C At a set temperature of 55°C, difference between the highest and the lowest is within 1.0°C

Note: The above performance data is based on operation at 95°C: 120 sec, 55°C: 120 sec, AT 23°C, and 1 atm.





Recommended compatible consumables *,**			
Part number	**Vendor**	**Product type**	
4ti-0912	Azenta	FrameStar® 96 Well Semi-Skirted PCR Plate, ABI® FastPlate Style	0.1 ml 96-well frosted wells, clear frame
4ti-0793	Azenta	8 Well PCR Tube Strip, With Attached Caps	0.1 ml 8-tube strip cap seal type

* not sold or distributed by PHC Europe B.V.
** Compatibility of other plates will be confirmed upon request.

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