

**1 LOT SUPPLY, DELIVERY AND INSTALLATION OF REAL-TIME POLYMERASE CHAIN REACTION (PCR) WORKFLOW MACHINES**

**ABC: Php. 3,800,000.00**

**DELIVERY PERIOD: 90 Calendar Days**

**BREAKDOWN:**

- a. 1 Unit Real-time PCR Machine with complete accessories- with 13 items inclusion
- b. 1 unit TissueLyser
- c. 1 unit LED Digital Dry Bath with Lid and Blocks
- d. 1 unit Microplate reader with washer and micro volume oven plate

**A. 1-unit REAL-TIME POLYMERASE CHAIN REACTION (PCR)**

**TECHNICAL SPECIFICATIONS**

Sample Capacity: 0.2ml single tube (transparent cap), 96 x 0.2 (0.1) ml Plate (transparent cap), 8-strip tubes (transparent cap)

Reaction Volume: 10-100 ul (96 plate)

Dynamics Range: 1-10<sup>10</sup> copies/L

Excitation Wavelength: 300- 800nm

Emission Wavelength: 500- 800nm

Block Temp. Range: 4- 105C (minimum increment: 0.1C)

Temp. Control Mode: Block/Tube simulation mode

Temp. Display Resolution: ± 0.15C

Temp. Control Tech: Peltier

Temp Uniformity: ≤±0.2C

Maximum Heating/Cooling Rate: 6C/s

Gradient Control Section: 6 independent temperature control zones

Hot-lid Temp: 30- 110C (range)

Fluorescence Dyes:

F1- FAM, SYBR Green I

F2- VIC, HEX, TET, JOE, TAMRA, CY3, NED

F3- ROX, Texas-Red

F4- Cy5

F5- Cy5.5

F6- For customized

Maximum Ramp Rate: 6°C/sec.

Accuracy: ±0.2°C of programmed target at 90°C

Uniformity: ±0.2°C well-to-well within 10 sec arrival at 90°C

Gradient

Operational Range: 30-110°C

Programmable Span: 6 independent temperature zones. You can set the temperature between 4-100°C per zone. More flexible, wider span, editable gradient temperature.

Optical Detection

Excitation: 6 filtered LEDs. Use independent filtered wheels for exciting and emission; No need expand channel for second exciting detection test.

Detection: 6 filtered photodiodes CMOS Detector. All new array parallel light source; Improve exciting light effect, intensity fluorescence signal

Range of Excitation/emission wavelengths: 300-800nm

Sensitivity: Detects 1 copy of target sequence in human genomic DNA

Dynamic Range: 10 orders of Magnitude

Scan Time: Single Channel: Within 1 second

All Channels: 12 seconds

Real Time PCR License: Yes

Software: Can be used for Absolute Quantification using a standard curve, Relative Quantification of different genes, together with Endpoint Genotyping analysis by detection of SNPs.

Data Analysis: can be viewed and analyzed quickly using the amplification plots, scatter plots, standard curves, auto call features and reporting options.

Fluorescent and temperature curves are displayed in “real-time”, and conventional methods such as setting a threshold, linear regression or via second derivation are used to determine the C<sub>q</sub> values. (C<sub>q</sub> = quantification cycle, sometimes referred to as C<sub>t</sub> = threshold cycle). Fluorescent curves can be shown in

linear or logarithmic form as desired. The integrated quality system indicates if your results and controls are consistent with pre-defined parameters.

Communication Interface: USB Adapter (to PC), Bluetooth adapter

Sensitivity: Distinguish 500 and 1000 concentration

Safeguard and Alarm: Hot-lid over heat protection and alarm, switching power supply over heat protection

Optical Path System:

Array Parallel Light Source

Uses independent filter wheels for exciting and emission

No need to expand channel for second exciting detection test

Takes 1 sec max for 1 channel detection

High sensitive CCD

Fully Automatic Sample Cavity

Certifications: CE/RoHS

APP Adopted: Real time monitoring for easy administration and operation

Large Touch Screen

Stand-Alone operation or upload PC edited programs by USB

No calibration needed

Electrical Requirement: 220V

Open System: Can accommodate all types of kits and consumables

Windows 10 System

**Inclusions:**

1. 100 sheets PCR seal: clear adhesive film, strong adhesive, peelable; suitable for PCR and optical applications
  2. 100 pcs PCR plates: Standard profile, 0.2 ml wells, polypropylene, cut corner H12, working volume: <200  $\mu$ l, total well capacity: 300  $\mu$ l; 96 Well Non-Skirted PCR Plate
  3. 60 PCS PCR strips: Standard profile, 0.2 ml polypropylene wells, polycarbonate frame, working volume: <200  $\mu$ l, total well capacity: 300  $\mu$ l; available with either strips of domed or flat optical caps
  4. 15 pcs Gel Ice Packs
  5. 1000 pcs 2.0 ml Microcentrifuge tubes
  6. 5 sets filtered tip racks
  7. DNA Extraction Kit (50 reactions)
  8. qPCR Mastermix 100 reactions (Universal) SYBR qPCR Master Mix (2X) contains SYBR DNA Polymerase, reaction buffer, dNTPs, SYBR Green I dye, and MgCl<sub>2</sub> at a final concentration of 2.5 mM.
  9. 15 Single Channel Pipettes - 3 units each of the following volume range:100 - 1000  $\mu$ l; 0.2 – 2  $\mu$ l; 2 - 20  $\mu$ l; 20 - 200  $\mu$ l (Low pipetting forces; Highly durable shaft; UV Resistant; Autoclavable)
  10. 2 Units Multi-Channel Pipette (8 channels)  
0.5 to 10  $\mu$ l and 20 -200  $\mu$ l (Low pipetting forces; Highly durable shaft; UV Resistant; Autoclavable)
  11. 1-unit Grinder Blender
  12. 2 units PRINTER, DESKTOP AND MONITOR FOR THE REAL TIME PCR MACHINE AND MICROPLATE READER
- Tower (Minimum requirement)  
CPU: Intel Core i5 – 6500; GPU: Intel HD Graphics 530; Ram: 4.00 GB; Storage Drive: 1 TB  
System Type: 64-Bit Operating System; With Optical Drive; Operating System: Windows 10  
Power Supply: 280W
- Monitor  
Display Size: 24 inches  
Resolution: 1980 X 1080  
Aspect Ratio: 16:9  
With Stand Tilt  
Video Input: HDMI, VGA  
LED-Backlit
- Printer – minimum requirement  
Printing Method: print head.  
Nozzle Configuration. 180 Nozzles Black, 59 Nozzles per Color.  
Minimum Droplet Size. 3 pl.  
Ink Technology. Dye Ink.  
Printing Resolution. 720 x 720 DPI.

13. 1 UNIT UPS - this would ensure that during power loss the samples would not be affected. Provides emergency power to a load when the input power source or main power fails.) - 3KVA, Input: 208-240 VAC, 50/60 Hz, Output: 208-240 VA, capacity: 3KVA/2700 Watts  
Warranty: 3 years on parts and services against manufacturers defect  
Packaged with: After sales support (training from manufactured trained engineers/application specialist), quick response to requests especially if the machine has problems, free services, and training on the use of the equipment plus annual training for 3 years

#### **B. 1 unit Tissue Lyser**

1. Simultaneous disruption of up to 12 samples.
2. Compact instrument with small footprint.
3. Coolable adapter to prevent biomolecule degradation.
4. Reproducible results with all sample types.
5. Compatible with all laboratory workflows.

Disruption principle: High-speed shaking of samples in 2 ml microcentrifuge tubes with stainless steel or glass beads  
Kits compatible with instrument: All kits for purification of RNA/DNA/protein  
Protocol/main application on this instrument: Sample preparation/sample disruption  
Technology: Bead Mill  
Typical run time: 40 sec - 5 min, depending on protocol  
For Low to medium throughput sample disruption for molecular analysis.  
Dimensions: Weight: 7 kg; Width: 150 mm; Depth: 270 mm ; Height: 280 mm  
Electrical Requirement: 110- 220V

#### **Inclusions:**

Items below should be compatible with the unit

1. Adapter, 12-Tube: Adapter for disruption of up to 12 sample s in 2ml microcentrifuge tubes.
2. Stainless steel beads, 5mm.

Packaged with: After sales support (training from manufactured trained engineers/application specialist), quick response to requests especially if the machine has problems, free services, and training on the use of the equipment

#### **c. 1 unit LED Digital Dry Bath with Lid and Blocks**

Number of blocks: 1  
Heating temperature range: room temp. +5° - 120 °C  
Heat output: 165 W  
Temperature display: yes  
Adjustment and display resolution: 1 K  
PT 1000 variation; DIN EN 60751 Kl. :  $\leq \pm (0.15 + 0.002 \times |T|)$  K  
Temperature stability within the blocks at 37°C \*:  $0.2 \pm ^\circ\text{C}$   
Temperature stability within the blocks at 60°C \*:  $0.4 \pm ^\circ\text{C}$   
Temperature Homogeneity @ 37°C \*: 0.2 K  
Temperature Homogeneity @ 60°C \*: 0.4 K  
Heating rate / Heat up time with external sensor \*: 5 K/min  
Set-up plate material Aluminum alloy  
Fixed safety circuit: 150 °C  
Timer: yes  
Time setting range: 1 - 5999 min  
Protection class according to DIN EN 60529: IP 21  
Permissible ambient temperature: 5 - 40 °C  
Permissible relative humidity: 80 %  
Voltage: 220 - 240 / 115 / 100 V  
Power Input: 165 W  
Frequency: 50/60 Hz

#### **D. 1 unit Microplate Reader with Washer and Microvolume Well Plate**

Detection mode: UV/Vis Absorbance Spectra  
Measurement Modes: Endpoint and Kinetic spectra scanning (Absorbance) Well scanning  
Microplate Formats: 6 to 1536-well plates, user-definable  
Lvis Plate with 16 low-volume micro spots (2 ul)  
Microplate Carrier: Robot Compatible  
Light Sources: High energy xenon flash lamp  
Detectors: CCD Spectrophotometer

Wavelength Selection: UV/VIS Absorbance Spectrometer Full spectra or 8 distinct wavelengths in <1sec/well

Spectral Range: 220-1,000 nm

Sensitivity:

Full spectrum captured in <1 s/well

Selectable spectral resolution: 1,2,5 and 10 nm

OD Range: 0 to 4 OD

Precision: <0.5% at 1 OD and <0.8% at 2 OD

Accuracy: <1% at 2 OD

Read Times: Full spectrum from 220 to 1,000 nm in less than 1 sec/well

Shaking: Linear, orbital and double-orbital with user-definable time and speed

Purge Gas Vent: System to inject an atmosphere or to pull a vacuum into the and speed

Incubation: +3C above ambient up to 45 °C

Dimension: Width: 36 cm; Depth: 50 cm; Height: 16 cm; weight: 10 kg.

Software: Multi-user reader control and data analysis

FDA 21 CFR Part 11 compliant

- Low volume microplate for DNA/RNA Quantification
- Microplate Washer 8 channels
- 100 pcs 96 Clear Well Plates (absorbance)

Low volume microplate: Micro-drop Module for Micro-Volume Measurements: i.e. DNA/RNA measurements of up to 16 (2uL) samples simultaneously

Low volume microplate must be a low-volume microplate that incorporates a cuvette slot and optional performance testing features.

**Inclusion:** Hands-on training on the operation & maintenance of the above laboratory equipment.