Ultra-Fast Real-Time Quantitative PCR Analyzer

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nQ16-X4/5　　nQ16T-X4/5

Product Description

nQ16-X4/5 and nQ16T-X4/5 are easy to use 16-wells Real-Time Quantitative PCR system.

The small footprint of platform and ultra-fast ramping speed make it ideal for point-of-care and on-site testing applications.

The instrument can be configured to 2-channels, 4-channels, and 5-channels for broad applications in bio-research, rapid diagnostic of human pathogens,food safety tests, veterinary& agriculture pathogens, etc detections.

Isothermal PCR Analyzer

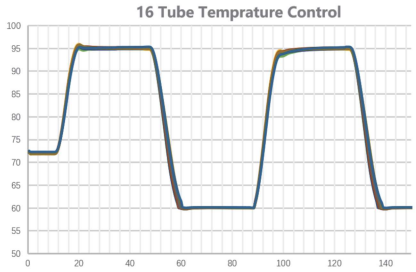
nL16-X4/5　　nL16T-X4/5

Product Description

nL16 and nL16T are open detection platforms, which apply the principle of isothermal amplification and combined with fluorescence detection technology. The device can be used for various isothermal amplification reactions to detect bacteria, viruses and other microorganisms on a molecular basis. Isothermal amplification technology offers many advantages over existing molecular diagnostic platforms, providing a cost-effective solution that works at a constant temperature and enables the diagnostic of DNA/RNA in a compact,independent and sensitive instrument, it is ideal for on-site detection and rapid test.

- The instrument uses a universal 100uL PCR reaction tube, which reduces the cost of consumables and is easy to obtain.
- The ultra-fast reaction speed can complete the isothermal amplification within 30 minutes.
- The device is open platform, adaptable to a variety of isothermal amplification reagents.
- You can select the machine operated by a powerful PC software, or a standalone type with a touch screen. The PC version software can be connected to the instrument via Bluetooth for remote operation.

Product Features

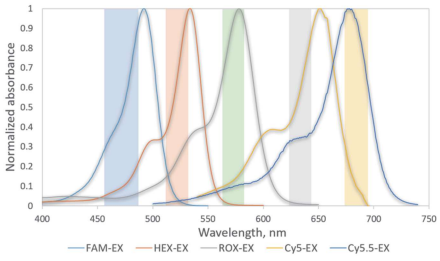


Ultra-Fast and Precise Thermal Cycling - nQ16

High-efficiency gold-plated Peltier provides heating and cooling rate up to 10°C/s, completing 45 cycle amplification within 25 min.

Innovative alloy block design provides high temperature uniformity of ±0.15°C.

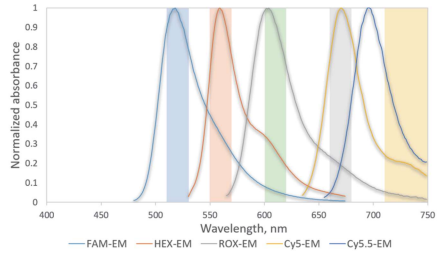
With the specially designed cooling system, it can maintain high-speed heating and cooling with an average operating noise of 50 dB.



Innovative Optic Design

Based on confocal scanning fluorescence detection technology, it can effectively remove the interference of background light and excitation light,obtain fluorescent signals with a high signal-to-noise ratio, and save the use of fluorescent probes and dyes.

High-performance, long-life single-color LEDs are used as excitation light sources, without thermal attenuation, and maintenance-free for life.

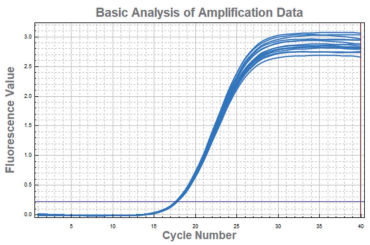


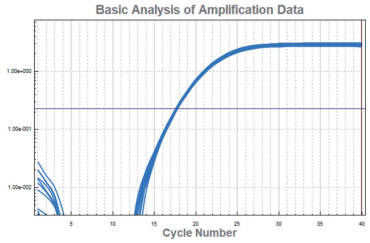
High-performance silicon PMT can obtain high fluorescence signals under weak excitation light and reduce photobleaching.

The instrument uses linear fluorescence time-sharing scanning technology to ensure the uniformity of all fluorescence acquisitions, improving the accuracy and uniformity of CT.Thereby, the edge effects is effectively reduced and ROX calibration is not required.

Excellent Reproducibility

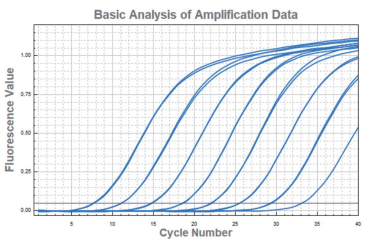
Robust design ensures superior uniformity from run to run 。 Amplification curves for 16 replicates shown on a linear plot a logarithmic plot.Average quantification cycle (Cq)=17.8±0.10.

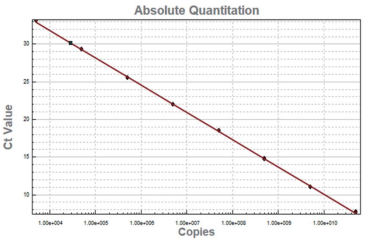




Up to 10-log dynamic range

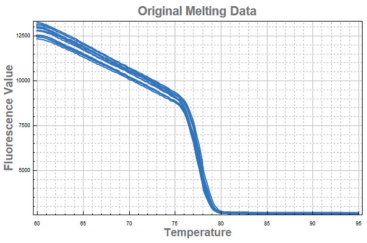
Results on the nQ16-X4/5 System show excellent reproducibility and resolution down to very low copy numbers.

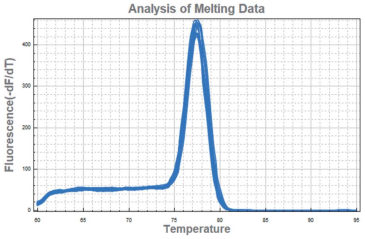




Melting Curve Analysis

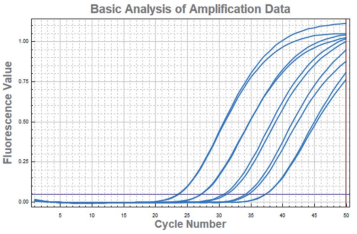
16 replicates of human genomic DNA were amplified using SYBR reagent. The reactions were run under fast run mode, showing thermal uniformity as measured by the derivative peak with a melting temperature (Tm) of 77.5°C (standard deviation 0.05°C).

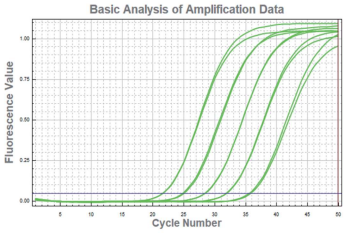




High Efficiency in Multiplex

The system enables the analysis of target genes using a standard curve.It provides 10-fold dynamic range and gives excellent linearity and efficiency of 100%.

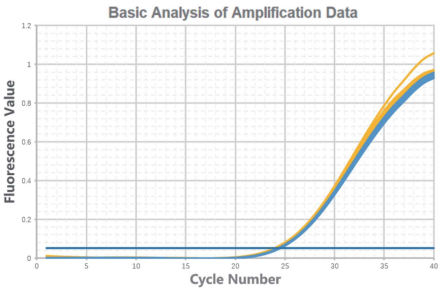




Ultra-Fast Mode - nQ16

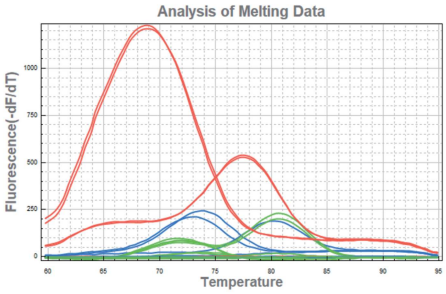
Benefiting from the innovative data gathering design and high-speed temperature control system, the detection time of the 5-colors and 16-wells can be shortened to 2seconds, which can minimize the difference in PCR extension time of different wells caused by the detection time.

The experiment with 40 cycles can be completed within 20 minutes. The yellow curve was Standard speed (60minutes for 40Cycles) and the blue curve was Fast mode (25minutes for 40Cycles)



Multi-Melting Curve Analysis - nQ16

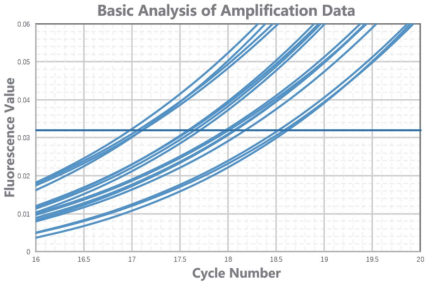
The system enables the analysis of up to 5 target genes in one reaction with Multi-Melting Curve Analysis. The melting temperature range from 40℃-95℃, with 0.5℃ resolution in all fluorescence channels, and provide over 4x5 target in a single tube reaction.



High Resolution to Detect 1.33-Fold

The excellent uniformity of temperature together with quick detection of data guarantee the reaction temperature and time to be identical between different tubes, so it can reliably detect 1.33-fold differences in target amount.

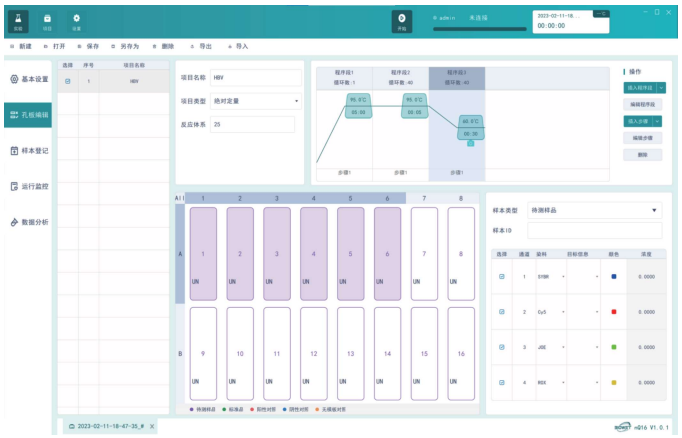
The figure shows the curve of 4 gradient dilutions: 2.25C, 1.5C,1.33C,1C, each concentration has 4 replicates.



*Above characteristics related to the temperature ramping rate and melting curve are not applicable to isothermal PCR nL16 and nL16T.

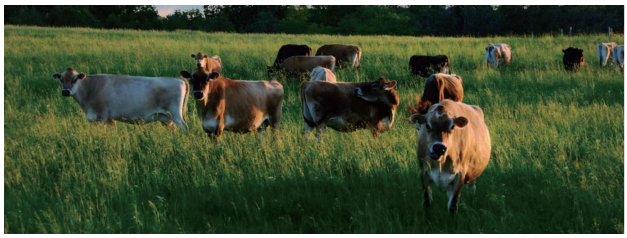
User-friendly Software Interface Design

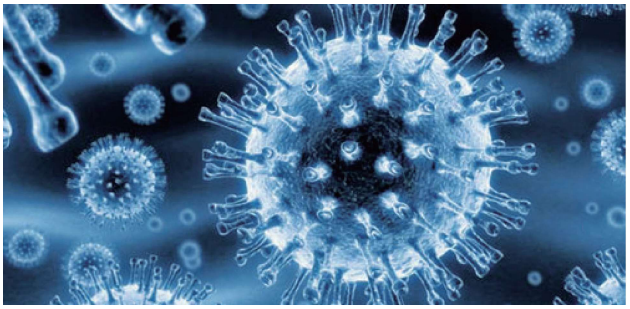
The software of nQ96, nQ16, and nL16 uses a navigational operation interface, which is intuitive and easy to use. The unique project management design help users efficiently manage common detection items and quickly complete the experimental setup. The user can create a project including the experimental setting (experiment type, detection target, PCR reaction protocol, etc.) information. Before the experiment, the user can select the existing project and only needs to set the reaction well position to quick start the run. Moreover, it supports one-click sample information Import to shorten the time to setup sample information.

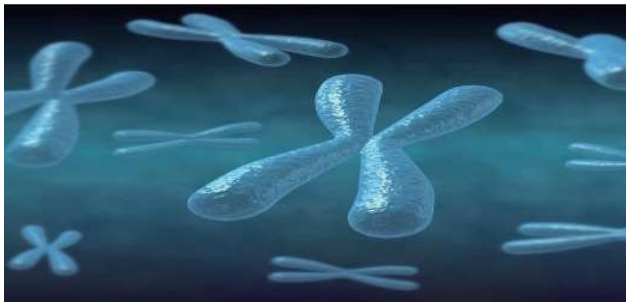


nQ16T and nL16T are equipped with a 7-inch touch screen, which can be operated independently. The operation interface is simple and easy to use. The instrument can be placed in the quick detection suitcase, mobile laboratories etc , and users can quickly carry out on-site test.

Application







Food Testing	Veterinary and Agriculture
With ever increasing demands ofr clarity on the source and type of products we are consuming, speciation and pathogen detection allow users to do exactly that.	A wide range of veterinary and agricultural pathogen detection.
Mycotoxins.	Avian, Porcine
Speciation.	Bovine, Canine
Allergens.	Ovine - Caprine.
Pathogen Contamination.	Equine.
SARA-CoV-2 on environmental surfaces	Feline.
Human Pathogens	
Respiratory Infections.	Hepatitis Infections.
Sexually Transmitted Diseases.	Human Papillomavirus.
Herpes Viral Infections.	Gastrointestinal Infections.

Specification

	nQ16-X2/4/5	nQ16T-X2/4/5	nL16-X4	nL16T-X4
Product Type	Real-Time QPCR	Real-Time QPCR	RT-Isothermal PCR	RT-Isothermal PCR
Temperature Control System				
Sample capacity	16			
Compatible consumables	0.1mL Clear tube 0.1mL Clear 8-strip tube			
Sample colume	10-50 μL			
Heating and Cooling method	Peltier		Heating element	
Maximum ramping rate	10.0° C/s	10.0° C/s	1°C/s	1°C/s
Temperature range	4-100 °C	4-100 °C	30-80°C	30-80°C
Accuracy	± 0.1°C	± 0.1°C	± 0.2°C	± 0.2°C
Uniformity	±0.15°C	±0.15°C	± 0.15°C	± 0.15°C
Optic System				
Light source	Single color LEDs			
Detector	SiPMT			
Detection method	Time resolved real-time scanning			
Exciation /Emission wavelength	455-650nm/510-750nm			
Detection channels	2 &4 (customizable 5)	2 &4 (customizable 5)	4	4
Supported dyes	FAM/SYBR Green, VIC/JOE/HEX/TET, ROX/Texas Red, Cy5/LIZ	FAM/SYBR Green, VIC/JOE/HEX/TET, ROX/Texas Red, Cy5/LIZ	FAM/SYBR Green, VIC/JOE/HEX/TET, ROX/Texas Red, Cy5/LIZ	FAM/SYBR Green, VIC/JOE/HEX/TET, ROX/Texas Red, Cy5/LIZ
Multiplexing	4/5			
Sensitivity	1 copy gene			
Resolution	1.33-fold copies difference in single-plex reaction			
Dynamic range	10 orders of magnitude			
Data Analysis				
	Absolute quantification and Melting curve		Absolute quantification	
Data Export				
	the original test result in excel, amplification curve image,sample setting;			
Data connection	USB, bluetooth	USB	USB, bluetooth	USB
Operation mode	PC software	7"touch screen	PC software	7"touch screen
Power	AC100-240V, 50/60Hz			
Dimension (LxWxH)	300*260*110mm, 5.7Kg			