

ViiA 7 Real-Time PCR System



Green benefits

- Energy-efficient: 35–41% more efficient than comparable systems
- Less waste/fewer resources used: 15% less material than predecessor

Introduction

We are committed to designing our products with the environment in mind—it’s part of how we enable our customers to make the world healthier, cleaner, and safer. This fact sheet provides the rationale behind the environmental claim that the Applied Biosystems™ ViiA™ 7 Real-Time PCR System is more energy-efficient than its predecessor, the Applied Biosystems™ 7900HT Real-Time PCR System, and also the Roche™ LightCycler™ 480 System and the Bio-Rad™ CFX384™ Real-Time PCR Detection System.

Compared to the 7900HT Real-Time PCR System, less raw material is used to manufacture the ViiA 7 Real-Time PCR System. This translates to decreased fuel consumption and greenhouse gas emissions associated with transport, and less waste at end-of-life.

In addition, the ViiA 7 Real-Time PCR System is easy to recycle because it is designed free of key hazardous substances commonly found in electronic products (e.g., lead, mercury, cadmium, hexavalent chromium, and polybrominated flame retardants).

Product description

The ViiA 7 Real-Time PCR System is an ideal tool for high productivity. The ViiA 7 system offers a simplified workflow, intuitive software, touch-screen interface, and one-button protocols to minimize errors and enable exceptional reproducibility with minimal well-to-well and instrument-to-instrument variation. Full compatibility with Applied Biosystems™ TaqMan™ reagents and TaqMan™ Array Microfluidic Cards makes high-productivity real-time PCR accessible to any lab.

Table 1. Energy usage during a run.

Instrument	Average power usage (kW)	Run time (hr)	Energy consumption (kW-hr)	Energy savings of ViiA 7
ViiA 7 Real-Time PCR System	0.41	0.67	0.27	—
Bio-Rad CFX384 system	0.23	1.83	0.42	35%
Roche LightCycler 480 System	0.37	1.25	0.46	41%

Green features

Energy-efficient

The ViiA 7 Real-Time PCR System draws 41% less energy to process one sample plate (instrument in a heated state), compared to the Roche LightCycler 480 System, and 35% less energy than the Bio-Rad CFX384 Real-Time PCR Detection System (Table 1). When idling, the ViiA 7 Real-Time PCR System uses 77% less energy than the 7900HT Real-Time PCR System (Table 2). Energy-efficient lab equipment helps reduce greenhouse gas emissions and save money.

Other considerations for energy usage measurements

- Each instrument's power usage was measured at different nominal voltages. This has a negligible impact on energy usage measurements.
- The well plates were not filled with water or medium. This has a negligible impact on energy measurements.

Less waste/fewer resources used

The ViiA 7 Real-Time PCR System weighs 15% less than its predecessor, the 7900HT Real-Time PCR System (Table 3). Because of the reduced weight, the fuel consumption and greenhouse gas emissions associated with its transport are lower. Furthermore, the ViiA 7 system has a 44% smaller physical footprint, which

Table 2. Energy usage during idling.

Instrument	Average power usage (kW)	Run time (hr)	Energy consumption (kW-hr)
7900HT Real-Time PCR System	0.59	1	0.59
ViiA 7 Real-Time PCR System	0.13	1	0.13
Energy conservation			77%

Table 3. Instrument weights.

Instrument	Weight (kg)
7900HT Real-Time PCR System	79
ViiA 7 Real-Time PCR System	67
Reduction	15%

supports the efficient use of laboratory space, and increases freight density, further reducing emissions during transit.

UL validation

UL™ environment claim validation helps support the growth and development of sustainable products and services in the global marketplace through independent third-party assessment and certification. UL Environment is a wholly-owned subsidiary of Underwriters Laboratories, a global leader in conformity assessment that has been testing and certifying products and writing standards for over 115 years.

We have presented the data that support our claim that the ViiA 7 Real-Time PCR System uses less energy and weighs less than its predecessor, the 7900HT Fast Real-Time PCR System. These claims have been validated by UL Environment Inc. in accordance with the Federal Trade Commission's 16 CFR Part 260—Guides for the Use of Environmental Marketing Claims. This validation helps ensure that environmental statements being made by manufacturers are accurate and not deceptive.

Find out more at thermofisher.com/viaa7