

VeritiPro Thermal Cycler for Human Identification



Faster ramp rates and quieter runs with advanced block technology

Same reliability, accuracy, and service as other Applied Biosystems instruments

Easy PCR optimization setup with more intuitive VeriFlex menu

Secure remote access

Smaller footprint

Simulation mode for seamless transition of Veriti protocols

The Applied Biosystems™ VeritiPro™ Thermal Cycler for Human Identification (HID) delivers high-end performance and proven reliability with advanced temperature control technology and connectivity.

- **Innovative design**—ramp rate of 6.0°C/sec, quiet fan, and ergonomic soft-close lid
- **Applied Biosystems™ VeriFlex™ Blocks**—provide precise control over 6 independent temperature zones for PCR optimization
- **Fleet control-compatible**—manage multiple instruments, users, and methods securely with Applied Biosystems™ Thermal Cycler Fleet Control Software
- **SWGAM validation**—tested across Applied Biosystems™ STR PCR amplification kits and Precision ID NGS panels

Table 1. Instrument specifications.

| | VeritiPro Thermal Cycler for HID |
|------------------------|---|
| Block format | 96-well, 0.2 mL alloy block |
| Max. block ramp rate | 6.0°C/sec |
| Max. sample ramp rate | 4.4°C/sec |
| Temperature accuracy | ±0.25°C (35–99°C) |
| Temperature range | 0–100.0°C |
| Temperature uniformity | <0.5°C (30 sec after reaching 95°C) |
| Dimensions (H x W x D) | 21.7 x 24.5 x 46.5 cm (8.5 x 9.6 x 18.3 in.) |
| Weight | 12.0 kg (26.5 lb) |
| PCR volume range | 10–100 µL |
| Instrument memory | USB port and 16 GB onboard memory; onboard capacity of >1,000 protocols |
| Display interface | 8-inch color TFT LCD |
| Power | 100–240 V, 50–60 Hz, max. 700 W |
| VeriFlex Block range | 30°C range across block, 6 temperature zones (up to 10°C per zone) |
| Cat. No. | A52127 |

VeritiPro Thermal Cycler for HID highlights

The VeritiPro Thermal Cycler for HID was designed with improved instrument vent technology to reduce the noise level, making it one of the quietest instruments in the Applied Biosystems™ thermal cycler portfolio. The expanded 8-inch touchscreen and improved user interface provide an intuitive, interactive system for easy programming. Protocol setup includes an option for simulation modes for easy instrument transition and consistency in experimental protocols. These updates are included in a more compact instrument that can easily fit in a small workspace.

Easy protocol transition

For users concerned about reoptimizing protocols to run on the VeritiPro Thermal Cycler for HID, simulation modes eliminate the need to do this work. Simulation modes allow the user to run protocols under the same conditions as a different thermal cycler. The user selects from a list of instruments, including the Applied Biosystems™ GeneAmp™ PCR System 9700, for easy instrument transition and consistency in experimental protocols.

Reliability

Each VeritiPro Thermal Cycler for HID comes with the proven reliability and quality associated with Applied Biosystems™ instruments. To ensure the highest reliability, components used to manufacture thermal cyclers must pass rigorous testing for repeated stress and environmental conditions, including low and high temperature and humidity, as well as shock and vibration testing according to ISTA standards.

SWGDM validation results

The VeritiPro Thermal Cycler for HID is validated according to the DNA Advisory Board (DAB) Quality Assurance Standards (July 1, 2020) and guidelines from the Scientific Working Group on DNA Analysis Methods (SWGDM) (December 2016) for use with the following Applied Biosystems™ kits: GlobalFiler™, GlobalFiler™ IQC, GlobalFiler™ Express, VeriFiler™ Plus, VeriFiler™ Express, Identifiler™ Plus, Identifiler™ Direct, MiniFiler™, NGM SElect™, NGM Detect™, YFiler™, and YFiler™ Plus PCR amplification kits (Figures 1–3) as well as the Precision ID GlobalFiler™ NGS STR Panel v2 and Precision ID mtDNA Whole Genome Panel. Please refer to the user bulletin “HID PCR amplification kit and Precision ID validation on the VeritiPro Thermal Cycler” for additional information.

| PCR amplification kit | DNA input (ng) | GeneAmp PCR System 9700 | VeritiPro Thermal Cycler |
|-----------------------|----------------|-------------------------|--------------------------|
| GlobalFiler IQC kit | 1 | 45/45 | 45/45 |
| | 0.5 | 45/45 | 45/45 |
| | 0.25 | 45/45 | 45/45 |
| | 0.125 | 45/45 | 45/45 |
| | 0.063 | 42/45 | 44/45 |
| NGM Detect kit | 0.5 | 32/32 | 32/32 |
| | 0.25 | 32/32 | 32/32 |
| | 0.125 | 32/32 | 32/32 |
| | 0.063 | 31/32 | 32/32 |
| YFiler Plus kit | 1 | 34/34 | 34/34 |
| | 0.5 | 34/34 | 34/34 |
| | 0.25 | 34/34 | 34/34 |
| | 0.125 | 34/34 | 34/34 |
| | 0.063 | 31/34 | 32/34 |

Figure 1. Dropout results (number of alleles detected/number of alleles expected) for two casework PCR amplification kits. The evaluation was performed using the indicated input amounts, with 3 replicates for each input level. Green: no dropout; orange: >1 dropout.

| PCR amplification kit | Blood | | Buccal | |
|--------------------------------|-------------------------|--------------------------|-------------------------|--------------------------|
| | GeneAmp PCR System 9700 | VeritiPro Thermal Cycler | GeneAmp PCR System 9700 | VeritiPro Thermal Cycler |
| VeriFiler Plus kit (10 µL) | 4,414 | 4,509 | 16,719 | 13,252 |
| VeriFiler Express kit (10 µL) | 3,033 | 4,978 | 9,966 | 9,104 |
| Identifiler Direct kit (25 µL) | 10,194 | 9,451 | 26,366 | 24,922 |

Figure 2. Average peak heights (in RFU) for direct amplification of DNA from three male buccal swabs on Whatman™ EasiCollect™ FTA™ cards and three male blood stains on FTA cards. A 1.2 mm punch was added to each amplification tube.

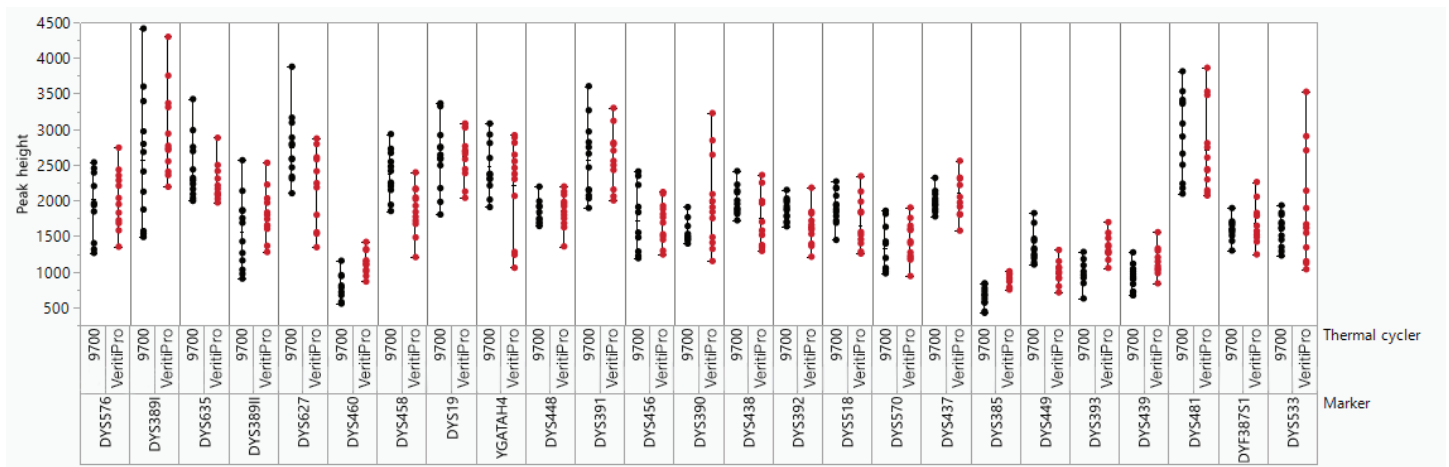


Figure 3. Peak height comparison (in RFU) per marker for a mixture sample at a 1:4,000 ratio (250 pg male DNA in presence of 1 µg female DNA) using the YFiler Plus PCR Amplification Kit.

All amplifications used default conditions included in their respective manuals, using a GeneAmp PCR System 9700 or a VeritiPro Thermal Cycler in the GeneAmp PCR System 9700 simulation mode, except for the amplifications with the YFiler Plus and Identifiler Direct kits, which were run in the GeneAmp PCR System 9600 simulation mode. Capillary electrophoresis was performed on an Applied Biosystems™ 3500xL Genetic Analyzer with 3500 Series HID Data Collection Software v4.0.1. STR profile results were analyzed with Applied Biosystems™ GeneMapper™ ID-X Software v1.6.

Find out more at thermofisher.com/hid-str