

The New Standard in Automated Extraction

InnuPure C16 *touch*



Automated Extraction

InnuPure C16 touch

A classic reinvents itself:

InnuPure C16 touch combines highly precise liquid handling with automated extraction of high-quality nucleic acids.

This instrument raises the bar when it comes to reliability and user-friendliness. The well-established walk-away principle ensures that the entire process is fully automated once the initial manual loading step is complete. This feature consistently eliminates potential risks: ready-to-use reagent strips and/or plates make pipetting errors a thing of the past, while 1 mL pipette tips with aerosol filters effectively prevent contamination of the dispensing unit and samples. The (optional) UV lamp rules out additional contamination risks.

The integrated 10" tablet in combination with IPextract make the InnuPure C16 touch convenient to operate. The system gives users fast, direct access along with a flexible selection of different settings. The optional barcode reader can be used for importing relevant information directly from the kit's label.



InnuPure C16 touch

The New Standard in Automated Extraction



Efficient: Fully automated nucleic acid extraction

- **Universally applicable** thanks to a wide range of implemented extraction kits for isolating DNA and RNA
- **Nucleic acid adsorption** onto magnetic particles or Smart Modified Surfaces
- **Combined magnetic/heating unit** offers flexible support for the automated process and collects the bound nucleic acids effectively
- **One platform - two technologies:** SmartExtraction or Magnetic Particle Based Extraction (by Innuscreen GmbH)

Intelligent: Sophisticated kit architecture simplifies handling

- **Prefilled reagent strips and/or plates** for processing between 1 and 16 samples in parallel
- **Sealed reagent cartridges** simplify and speed up the process
- **Manual work is limited** to loading the sample tray

Established: Over 25 years of experience in liquid handling

- **Highly precise pipetting;** guaranteed pipette tip seal
- **Desired elution volume** can be automatically set between 20 μ L and 500 μ L
- **Final step:** Isolated nucleic acids transferred to storage tubes with lids

Reliability: Risk of cross-contamination eliminated

- **1 mL pipette tips** with integrated aerosol filter provides reliable protection for the dispensing unit
- **Ready-to-use reagent** plastics minimize risk of contamination
- **Optional UV lamp** provides a simple means of decontaminating the sample chamber

Convenient: Intuitive operation with IPextract

- **Stand-alone operation** with integrated 10" tablet
- **Wizard feature** guides beginners through the menu; experienced users have quick, direct access to pre-installed extraction protocols
- **Barcode-labeled extraction kits** contain all relevant information

Fully Automated Nucleic Acid Extraction

The InnuPure C16 *touch* with optimized chemistry is a system for flexible, efficient nucleic acid extraction. Based on the two available extraction technologies customers can prepare an extremely wide variety of starting materials thanks to the system's large number of ready-to-use kits.

In addition to automated protocols for bacteria, viruses, as well as human, animal and plant tissues, customers can easily process complex forensic samples and highly processed food. The system also provides enrichment routines for cell-free nucleic acids.

Magnetic particle-based extraction

High-quality magnetic particles act as the solid phase for binding nucleic acids. Buffer conditions are set both to create a fine particle dispersion in solution and to ensure fast, quantitative sedimentation during collection, while the multifunctional intelligent heating/magnetic unit (IHMU) is moved into position under the bottom of the reagent cartridges. The liquid can then be reliably aspirated without transferring magnetic particles.

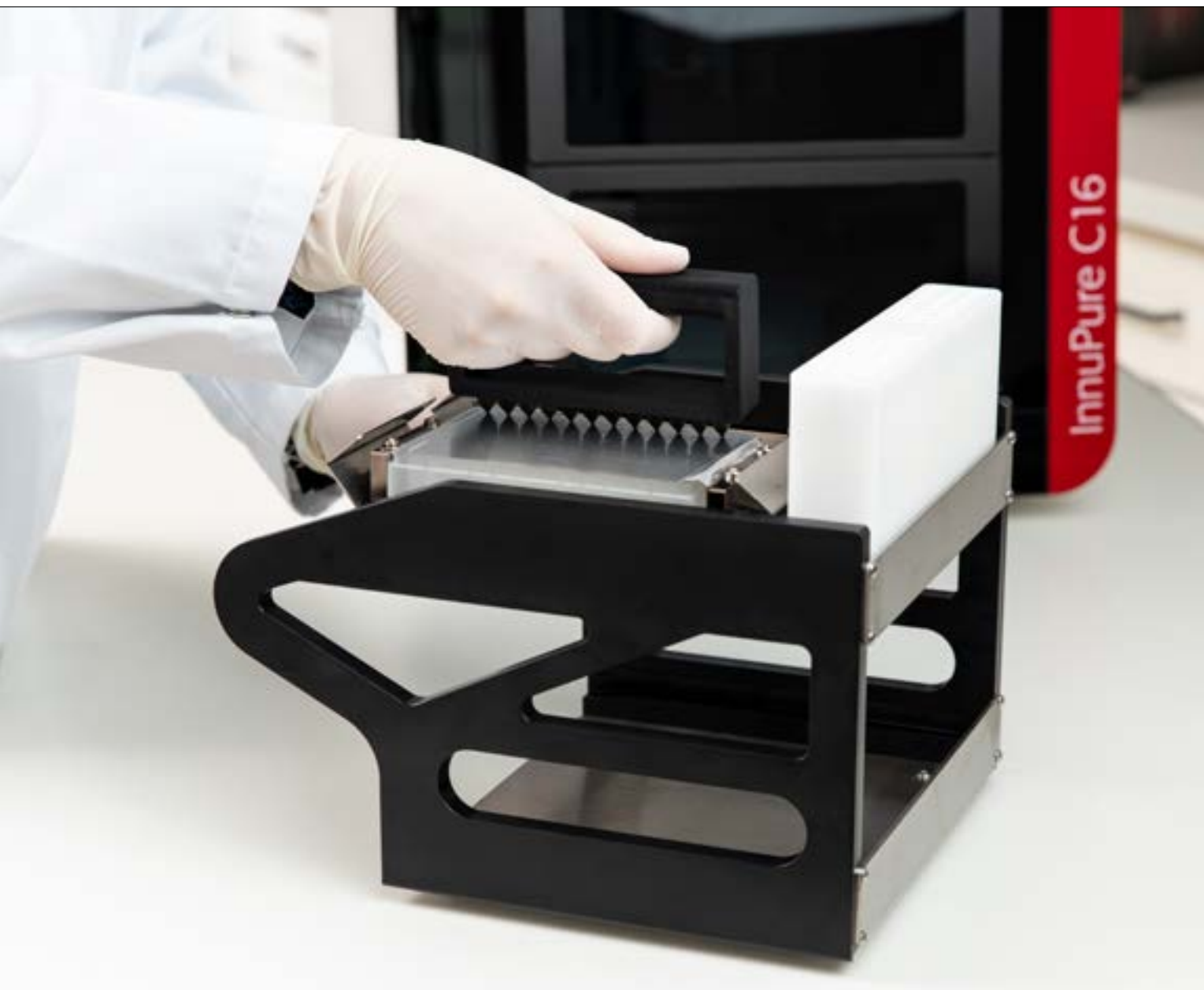
The heating function supports the automated process during lysis, drying and elution. Residual solvent, which can potentially inhibit subsequent applications, are removed effectively, and nucleic acids are efficiently desorbed in the elution buffer.

Rounding out the overall application is the use of patented extraction chemistry based on DC Technology (Dual Chemistry). The use of variable buffer systems while simultaneously reducing the concentrations and/or ionic strengths required creates the perfect conditions for proteolytic lysis and reduces the potential risk of transferring salts into the eluted sample. This results in optimized workflow times and the extraction of high-quality nucleic acids.

- Automated DNA and RNA extraction
- Also suitable for processing complex samples such as forensic materials and processed foods
- Optimized protocols for nucleic acid enrichment
- Multifunctional intelligent heating/magnetic unit (IHMU)
- Flexible support for the overall extraction process
- Magnetic particle-based Extraction and SmartExtraction technology

SmartExtraction – we change the way to prep

Developed by Innuscreen GmbH, the technology is the first of its kind in the world to facilitate simple automation with conventional liquid handling systems. More than 35 years after silica-based DNA and RNA isolation was first scientifically documented, Innuscreen GmbH launched a global innovation in nucleic acid extraction. SmartExtraction significantly accelerates and considerably simplifies the entire procedure. Most notably, the technology is based on binding of nucleic acids to Smart Modified Surfaces and accommodates the trend towards maximum process automation by simple pipetting up and down.



Intelligent kit architecture

When used with the InnuPure C16 *touch*, ready-to-use extraction kits supplied by Innuscreen GmbH greatly simplify routine laboratory work while saving resources. The time-consuming job of filling reservoirs, for example, is a thing of the past. Pre-filled cartridges also eliminate the risks of filling the wrong tubes and of spilling reagent. Most importantly, however, having so many kit elements prepared in advance saves valuable time.

All kits come in two types of packaging: one that includes Reagent Strips for individual extraction processes for small numbers of samples and one with reagent plates for up to 16 extractions at medium sample volumes. This limits prep work for the InnuPure C16 *touch* to simply loading the sample tray.

- Process 1 to 16 samples in parallel
- Pre-filled, sealed Reagent Plastic for exceptionally easy preparation
- Fast and reliable



Core Liquid Handling Competencies

Over 25 years of experience with high-throughput technologies has made liquid handling systems one of Analytik Jena's core competencies.

The use of a highly precise pipetting system makes InnuPure C16 *touch* workflows accurate and reproducible. In addition, the high-quality pipette tips used guarantee optimal performance while minimizing the amount of liquid remaining in the tips.

The integrated dispensing unit allows operators to set the elution volume to a value between 20 μL and 500 μL ; transfer is then automatic. The pipette tips and Elution Tubes are all included as components of the extraction kit.

Excellent reliability – no cross-contamination

Various features of the InnuPure C16 *touch* and the corresponding extraction kits reduce the risk of potential cross-contamination to an absolute minimum. The aerosol filters in the 1 mL pipette tips, for instance, reliably prevent any impurities from reaching the dispensing unit or sample. The pipetting system does not require a complex cleaning process. An optional UV lamp is also available as an efficient tool for decontamination between two runs.

Special benefit: The easy-to-handle piercing tool eliminates the need for manually peeling off the film of the sealed reagent cartridges. Not only does this efficient feature reduce the prep work required, it also eliminates the need for mixing buffer solutions and the resulting negative impact on performance.

- Elution volume adjustable to up to 500 μL
- Highly precise liquid handling
- Superior reproducibility

- Piercing tool: Easy opening of sealed reagent cartridges
- Simple, user-friendly process that simultaneously improves reliability
- Optional: UV lamp (254 nm)

IPextract for the Ultimate in User Convenience

The integrated 10" tablet PC turns the InnuPure C16 *touch* into a compact, stand-alone system that can be operated without any additional peripherals.

The IPextract software package comes with all of the necessary extraction protocols, eliminating the often time-consuming process of adjusting to automated liquid handling. An integrated wizard is also available, making it easier for users just starting out in automated nucleic acid extraction to familiarize themselves with the process. Experienced users, on the other hand, can call up and begin using the protocols they want, right away.

If processing relatively large numbers of samples especially for diagnostic applications, the system can be connected to a 2D barcode reader via a USB port. This allows operators to import sample IDs, as well as to track and document samples. Kits with a barcode can also be scanned.

- Comprehensive software package for intuitive operation
- Modern 10" Windows 10 IoT touch screen



Technical Data

Extraction	Magnetic Particles	SmartExtraction
Basis	Magnetic particles	Smart Modified Surfaces
Duration of extraction	<ul style="list-style-type: none"> External lysis: < 45 min (without lysis) Internal lysis: < 75 min (incl. lysis) 	<ul style="list-style-type: none"> Depending on the extraction kit, volume and protocol External lysis: 32 min (without lysis) Internal lysis: 53 min (incl. lysis) Internal erythrocyte lysis: 85/117 min (500 µL/ 1000 µL whole blood)
Ø Yield	<ul style="list-style-type: none"> Depending on type and amount of sample Tissue (20 mg): up to 50 µg Whole blood samples (200 µL): up to 10 µg Plant (100 mg): up to 60 µg 	<ul style="list-style-type: none"> Depending on type and amount of sample Whole blood samples (1 mL, direct): up to 40 µg Whole blood samples (3 mL): up to 90 µg
Elution volume	20 µL up to 500 µL (in steps of 10 µL)	150 µL up to 500 µL (in steps of 10 µL)
Field of application	DNA and RNA extraction	DNA extraction
Sample parameters	Magnetic Particles	SmartExtraction
Number of samples	Up to 16 samples in parallel, incl. single sample preparation	
Sample amount	<ul style="list-style-type: none"> Depending on the type of sample Up to 10 mL urine (PME pre-enrichment) Up to 400 µL whole blood Up to 20 mg tissue Up to 5×10⁶ eukaryotic cells 	<ul style="list-style-type: none"> Depending on type of sample, especially suitable for elevated amount of starting material Up to 3 mL whole blood Up to 100 mg tissue Up to 1×10⁷ eukaryotic cells
Tempering	<ul style="list-style-type: none"> Up to 70 °C inside the sample Support of lysis, drying and elution 	
Control		
Control	Stand-alone control	
Display	10" tablet PC, color, touch, WIN 10 IoT	
Features	<ul style="list-style-type: none"> Automatic pipetting of chosen elution volume Automatic transfer of eluates into storage tubes with lid Pre-installed extraction and decontamination protocols Video sequences and display of residual time for ideal overview of the run 	
Liquid handling		
Pipetting head / channels	Dosing unit with 16 channels	
Tips	1 mL tip with aerosol filter	
Working volume	Up to 1000 µL	
Accessories		
Cleaning / decontamination	<ul style="list-style-type: none"> Big front door for easy access and wipe decontamination of the sample room Optional: UV lamp for decontamination between two runs by 254 nm UV light 	
Kits and Reagents	Ready-to-use kits for DNA and RNA extraction. Please note that the nucleic acid extraction kits associated with InnuPure C16 touch are available via our partner Innuscreen GmbH only.	
Additional	Priming Station and Sample Tray	

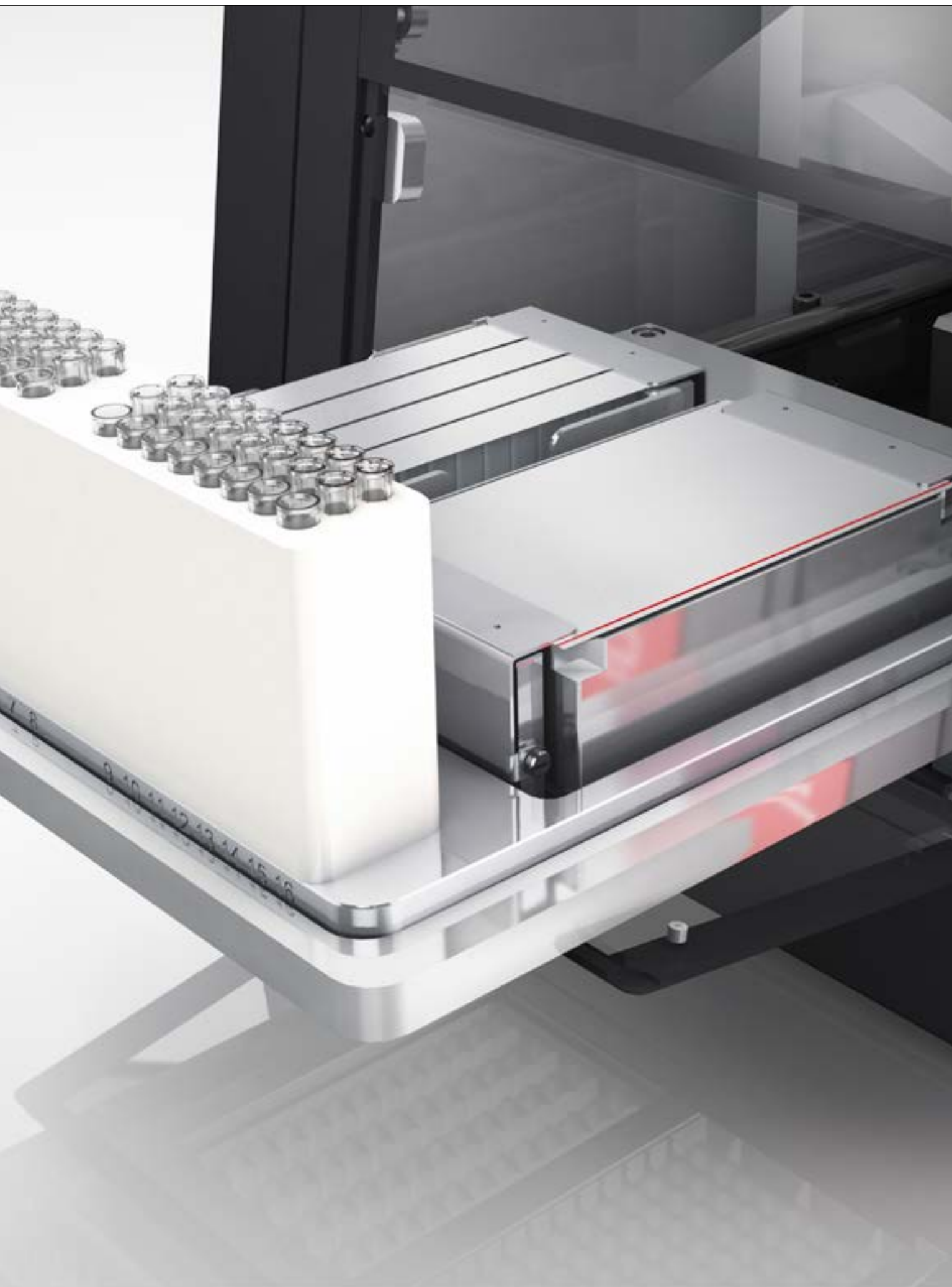
Additional Technical Data

Additional technical data	
Interface	Tablet Windows IoT; 2 USB interfaces for data transfer, barcode reader or others
Noise emission	Max. 55 dB
Warranty	2 years warranty on device system incl. tablet PC
Dimensions	
Weight	Approx. 30 kg
Dimension (W × H × L)	400 mm × 560 mm × 600 mm

Order Information

Order number	Description
845-00020-2	InnuPure C16 touch Instrument system stand-alone, incl. 10" tablet PC, Priming Station and Sample Tray
845-60025-0	Priming Station for InnuPure C16 touch Priming Station for InnuPure C16 <i>touch</i> and the usage of up to 2 Sample Trays for the easy preparation with all necessary kit components needed for automated extraction
845-60026-0	Sample Tray for InnuPure C16 touch Sample Tray for InnuPure C16 <i>touch</i> and the usage of up to 2 Reagent Plates and the preparation of up to 16 samples in parallel. For single sample handling adapters for usage of up to 4 Reagent Strips are available (optional)
845-60006-0	Adapter for 4 Reagent Strips Adapter for the Sample Tray of InnuPure C16 <i>touch</i> and usage of up to 4 Reagent Strips for single sample handling; one Sample Tray can be used with up to 2 adapters
845-60011-0	UV lamp for InnuPure C16 <i>touch</i> ; 230 V
845-60011-4	UV lamp for InnuPure C16 <i>touch</i> ; 110/115 V
844-00010-2	Barcodereader (2D)

Nucleic acid extraction kits are available via our partner Innuscreen GmbH. For more information please contact info.innu@ist-ag.com.



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Subject to changes in design and scope of delivery as well as further technical development.

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